

***ATP 4-02.55**

Army Health System Support Planning

September 2015

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

*This publication supersedes FM 8-55, dated 9 September 1994.

Headquarters, Department of the Army

This publication is available at Army Knowledge Online
(<https://armypubs.us.army.mil/doctrine/index.html>).

To receive publishing updates, please subscribe at
http://www.apd.army.mil/AdminPubs/new_subscribe.asp

Army Health System Support Planning

Contents

	Page
PREFACE.....	v
INTRODUCTION	vi
Chapter 1 ARMY HEALTH SYSTEM IN UNIFIED LAND OPERATIONS	1-1
Section I — The Role of Army Health System	1-1
Doctrine	1-1
Army Health System	1-1
Roles of Medical Care	1-6
Section II — The Application of Army Health System	1-8
Chapter 2 ARMY HEALTH SYSTEM MEDICAL FUNCTIONS	2-1
Section I — Medical Mission Command.....	2-1
Medical Mission Command Organization	2-2
Communications	2-4
Primary Task and Purpose	2-5
Section II — Medical Treatment (Organic and Area Support).....	2-6
Organization and Personnel	2-6
Primary Task and Purpose	2-6
Section III — Medical Evacuation	2-7
Medical Evacuation System	2-7
Planning for Medical Evacuation	2-7
Organizations	2-8
Primary Task and Purpose	2-8
Evacuation Precedence.....	2-9
Responsibilities.....	2-9
Section IV — Hospitalization.....	2-11
Combat Support Hospital	2-11
Augmentation Teams	2-11
Primary Task and Purpose	2-12
Section V — Dental Services.....	2-13

Distribution Restriction: Approved for public release; distribution is unlimited.

***This publication supersedes FM 8-55, dated 9 September 1994.**

	Categories of Dental Care	2-13
	Primary Task and Purpose	2-14
	Section VI — Preventive Medicine Services	2-14
	Protection Warfighter Function	2-15
	Organization and Personnel	2-15
	Primary Task and Purpose	2-15
	Section VII — Combat and Operational Stress Control	2-16
	Organization and Personnel	2-16
	Primary Task and Purpose	2-16
	Section VIII — Veterinary Services	2-17
	Veterinary Functions	2-17
	Primary Task and Purpose	2-18
	Section IX — Medical Logistics	2-18
	Medical Logistics Functions	2-19
	Primary Task and Purpose	2-19
	Section X — Medical Laboratory Services	2-20
	Clinical Laboratory Services	2-20
	Area Medical Laboratory Services	2-20
	Primary Task and Purpose	2-21
Chapter 3	ARMY HEALTH SYSTEM PLANS AND ORDERS	3-1
	Section I — Principles of Planning	3-1
	Section II — Army Health System Support Planning	3-2
	Section III — The Army Health System Estimate	3-4
	Format of the Army Health System Estimate	3-4
	Mission	3-11
	Courses of Action	3-11
	Army Health System Support Analysis	3-11
	Evaluation and Comparison of Courses of Action	3-13
	Conclusion	3-13
	Section IV — Running Estimate	3-13
	Section V — The Army Health System Support Plan/Order	3-14
	Preparation of the Plan	3-14
	Responsibility	3-14
	Purpose and Scope	3-14
	Format	3-14
Chapter 4	COMPUTATIONS	4-1
	Section I — Terminology	4-1
	Basic Requirements	4-1
	Casualty	4-1
	Hostile Casualty	4-2
	Nonhostile Casualty	4-3
	Section II — Classification of Patients	4-3
	Army Health System Support for Other Special Category Patients	4-4
	Army Health System Support for Enemy Prisoners of War	4-4
	Section III — Patient Admission Rates	4-5

	Section IV — Patient Admission Rate Computation	4-6
	Section V — Calculation of Patient Evacuation Requirements	4-6
	Time Factors.....	4-7
	Computations	4-7
	Section VI — Automated Methodologies	4-9
	Development of Automated Methodologies	4-9
	Medical and Casualty Estimator Tool.....	4-9
	Disease and Nonbattle Injury Calculator.....	4-10
	Chemical, Biological, Radiological, and Nuclear Casualty Estimator	4-11
	Base Camp Planning.....	4-11
	Medical Intelligence	4-11
Appendix A	ARMY HEALTH SYSTEM ESTIMATES.....	A-1
Appendix B	PATIENT RATE COMPUTATIONS	B-1
Appendix C	ARMY HEALTH SYSTEM OPERATIONS ORDER EXAMPLE	C-1
Appendix D	CALCULATIONS OF HOSPITAL BED REQUIREMENTS	D-1
	GLOSSARY	Glossary-1
	REFERENCES	References-1
	INDEX.....	Index-1

Figures

Figure A-1. Sample format for an Army Health System support estimate	A-1
Figure C-1. Example of an operation order format.....	C-1

Tables

Table 3-1. Sample strengths to be supported matrix	3-8
Table D-1. Example accumulation and disposition factors—combat zone.....	D-2
Table D-2. Example accumulation and disposition factors—theater	D-3
Table D-3. Dispersion allowance and factor conversion table	D-4
Table D-4a. Disease and nonbattle injury patient admission rates—Desert Shield/Storm, Bosnia, Kosovo, Operation Iraqi Freedom/Operation New Dawn, Operation Enduring Freedom (admissions per 1,000 strengths per day) as of April 2014	D-5
Table D-4b. Patient admission rates—Overall in World War II, Korean Conflict, and Vietnam Conflict (admissions per 1,000 strengths per day)	D-6
Table D-4c. Patient admission rates—Europe, World War II (admissions per 1,000 strengths per day)	D-7
Table D-4d. Patient admission rates—Italy, World War II (admissions per 1,000 strengths per day)	D-8
Table D-4e. Patient admission rates—Mideast Wars (between opposing non-U.S. forces) (admissions per 1,000 strengths per day)	D-8

Contents

Table D-4f. Patient admission rates—Central and South Pacific, World War II (admissions per 1,000 strengths per day)	D-9
Table D-4g. Patient admission rates—Southwest Pacific, World War II (admissions per 1,000 strengths per day)	D-9
Table D-4h. Patient admission rates—Korean Conflict (admissions per 1,000 strength per day).....	D-10
Table D-4i. Patient admission rates—Vietnam Conflict (admissions per 1,000 strength per day).....	D-10
Table D-5. Example problem statement	D-12
Table D-6. Example of preliminary bed requirement information (problem statement graphically depicted).....	D-13
Table D-7. Example calculations of operations area bed requirements at end of each 30-day period.....	D-14
Table D-8. Example for obtaining operations area average daily admissions.....	D-15
Table D-9. Example for finding accumulation factors	D-15
Table D-10. Example for obtaining total operation area patients remaining (period 1)	D-16
Table D-11. Example for obtaining total operation area patients remaining (period 2)	D-16
Table D-12. Example for obtaining total operation area bed requirements (period 1)	D-16
Table D-13. Example for obtaining total combat bed requirements (period 1)	D-17
Table D-14. Estimate of enemy prisoner of war bed requirements	D-17
Table D-15. Rate of admission to hospitals per 1,000 strength per day.....	D-17
Table D-16. Effects of a reduction in theater evacuation policy on bed requirements	D-18

Preface

Army Techniques Publication (ATP) 4-02.55 provides guidance to the medical commander, medical planner, and command surgeon at all levels of command in planning Army Health System (AHS) support for unified land operations. Users of ATP 4-02.55 must be familiar with unified land operations established in Army Doctrine Publication (ADP) 3-0; the operations process as stated in ADP 5-0; Army plans and orders production as promulgated in Field Manual (FM) 6-0; mission command systems of tactical units and the mission command process established in ADP 6-0; AHS support described in FM 4-02; and the Joint Health Service Support system described in Joint Publication (JP) 4-02. This manual provides the basic framework for initiating the planning process for AHS support. The planning process for AHS support includes all ten medical functions (Chapter 2); however, detailed doctrinal information is contained in the specific Army medical doctrine and not in this publication.

The principal audience for this publication is all medical commanders and command surgeons and their staffs, and nonmedical commanders involved in medical planning.

Commanders, staffs, and subordinates ensure their decisions and actions comply with applicable United States (U.S.), international, and in some cases, host-nation laws and regulations. Commanders at all levels ensure their Soldiers operate in accordance with the law of war and the rules of engagement. (See FM 27-10.)

This publication implements or is in consonance with the following North Atlantic Treaty Organization (NATO) Standardization Agreements (STANAGs) and NATO Standards:

Title	STANAGs	Standards
Allied Aeromedical Publication (AAMedP), Aeromedical Evacuation		1.1
Allied Joint Publication (AJP), Allied Joint Doctrine for Medical Support		4.10
Medical Employment of Air Transport in the Forward Area	2087	
Allied Joint Doctrine for Medical Support	2228	
NATO Planning Guide for the Estimation of Chemical, Biological, Radiological, and Nuclear (CBRN) Casualties—Allied Medical Publication-8(C)	2553	
Aeromedical Evacuation	3204	

This publication uses joint terms where applicable. Selected joint and Army terms and definitions appear in both the text and the glossary. For definitions shown in the text, the term is italicized and the number of the proponent publication follows the definition. This publication is not the proponent for any Army terms. Unless otherwise stated in this publication, the use of masculine nouns and pronouns does not refer exclusively to men.

Army Techniques Publication 4-02.55 applies to the Active Army, Army National Guard/Army National Guard of the United States, and the United States Army Reserve unless otherwise stated.

The proponent and preparing agency of this publication is the United States Army Medical Department Center and School, United States Army Health Readiness Center of Excellence. Send comments and recommendation on a DA Form 2028 (Recommended Changes to Publications and Blank Forms) to **Commander, United States Army Medical Department Center and School, United States Army Health Readiness Center of Excellence**, ATTN: MCCC-FDL (ATP 4-02.55), 2377 Greely Road, Building 4011, Suite D, JBSA Fort Sam Houston, Texas 78234-7731; by e-mail to usarmy.jbsa.medcom-ameddcs.mbx.ameddcs-medical-doctrine@mail.mil; or submit an electronic DA Form 2028. All recommended changes should be keyed to the specific page, paragraph, and line number. A rationale for each proposed change is required to aid in the evaluation and adjudication of each comment.

Introduction

Army Techniques Publication 4-02.55 replaces FM 8-55 and updates key planning topics while adopting current terminology and concepts as necessary. The AHS is a complex system of interrelated and interdependent systems which provides a continuum of medical treatment from point of injury or wounding through successive roles of medical care to definitive, rehabilitative, and convalescent care in the continental United States (CONUS), as required.

Planning is an essential element which facilitates the successful accomplishment of the Army Medical Department (AMEDD) mission. The medical planner, by carefully applying AMEDD doctrine and principles, is able to provide the best possible AHS for all Army operations. The AHS provides support to forces deployed across the full range of military operations with its various operational arrangements. The AHS is a complex system of highly synchronized, interrelated and interdependent systems comprised of ten medical functions. It is a system of systems. The medical functions align with medical disciplines and specialty training with the capabilities required to provide state-of-the-art care to Soldiers regardless of where they are deployed or assigned. The functions include: medical mission command, medical treatment (area support), hospitalization, dental services, preventive medicine services, combat and operational stress control, veterinary services, medical evacuation, medical logistics, and medical laboratory.

Army Techniques Publication 4-02.55 consists of four chapters and four appendixes as follows:

Chapter 1 provides an overview of the characteristics of the AHS, its principles, functions, the role of medical care, and medical planning factors. It also discusses the fundamental aspects used by medical planners to determine the best possible AHS to support Army operations.

Chapter 2 describes the ten medical functions and how they are aligned with specific medical disciplines of health service support (HSS) or force health protection (FHP) or sustainment medical tasks. It also provides the primary purposes of the functions to give the medical planner a planning reference point to work from.

Chapter 3 provides guidance for some of the unique complexity inherent to AHS planning. It also provides a brief review of and references the Army planning process and how it applies to AHS planning.

Chapter 4 discusses some of the many different and unique factors, terms, and computation the medical planner can use to develop the AHS estimate.

Appendix A provides a detailed example of the AHS estimate with planning considerations.

Appendix B provides an explanation of rate calculations and provides some of the more commonly used rate formulas.

Appendix C provides an example and guidance on the preparation of an AHS appendix to an operation order (OPORD) or operation plan (OPLAN).

Appendix D provides a methodology to manually calculate hospital bed requirements. It includes current and historical information to perform the calculations to assist in preparing the AHS estimate.

Chapter 1

Army Health System in Unified Land Operations

This chapter provides an overview of the characteristics of the AHS, its principles, functions, the roles of medical care, and medical planning factors. It also discusses the fundamental aspects used by medical planners to determine the best possible AHS to support Army operations.

SECTION I — THE ROLE OF ARMY HEALTH SYSTEM

1-1. A characteristic of the AHS is the distribution of medical resources and capabilities to provide roles of medical care. Policy provides the framework from which the medical community derives the direction and identifies the requisite people, materiel, facilities, and information to promote, improve, conserve, or restore well-being.

DOCTRINE

1-2. The capstone doctrine for the United States Army doctrinal guidance and direction for conducting operations is ADP 3-0.

1-3. The AMEDD capstone doctrine is contained in FM 4-02. Other supporting AMEDD doctrine is found in applicable AMEDD ATPs. This publication provides the broad doctrinal guidance and philosophy for conducting AHS in unified land operations.

ARMY HEALTH SYSTEM

1-4. The *Army Health System* is a component of the Military Health System that is responsible for operational management of the health service support and force health protection missions for training, predeployment, deployment, and postdeployment operations. Army Health System includes all mission support services performed, provided, or arranged by the Army Medical Department to support health service support and force health protection mission requirements for the Army and as directed, for joint, intergovernmental agencies, coalition, and multinational forces (FM 4-02). Although the Military Health System is an interrelated system which may share medical services, capabilities, and specialties among the U.S. Service components, it is not a joint mission command system. For information on joint HSS refer to JP 4-02.

1-5. The AHS is a complex system of systems. The systems which comprise the AHS are divided into ten medical functions which align with medical disciplines and scientific knowledge. These systems are interrelated and interdependent and must be meticulously and continuously synchronized. The ten medical functions are: medical mission command, medical treatment (area support), hospitalization, medical evacuation (to include medical regulating), dental services, preventive medicine services, combat and operational stress control, veterinary services, medical logistics (to include blood management), and medical laboratory services (to include both clinical laboratories and area laboratories).

1-6. The medical planner aligns the right mix of medical skills across the ten medical functions to the type of military formation where the support can be found. Medical planners need to provide the tactical commander with a composite sketch of what medical capabilities are available within the area of operations (AO) and what medical capabilities are available elsewhere in the operational environment. These functions and their planning considerations are further described in Chapter 2.

PLANNING AND THE ARMY MEDICAL DEPARTMENT MISSION

1-7. The AMEDD plays a key role in developing and maintaining combat power. Its mission is to maintain the health of the Army and to conserve its fighting strength. Commanders need to retain acclimated and experienced personnel to perform their particular mission.

1-8. Planning is an essential element that facilitates the successful accomplishments of the AMEDD mission. The medical planner, by carefully applying AMEDD doctrine and principles, strives to provide the best possible AHS for all Army operations. Timely and comprehensive planning enhances the capability of medical units to provide effective AHS as a force multiplier and is a key factor in conserving combat power.

PRINCIPLES OF THE ARMY HEALTH SYSTEM

1-9. The six principles of the AHS are the foundation—enduring fundamentals—upon which the delivery of health care in a field environment is founded. The principles guide medical planners in developing operational plans (OPLANs) which are effective, efficient, flexible, and executable. Army Health System plans are designed to support the operational commander's scheme of maneuver while still retaining a focus on the delivery of health care. Army Health System principles are explained in detail in FM 4-02.

1-10. The AHS principles apply across all ten medical functions and are synchronized through medical mission command and close coordination and synchronization of all deployed medical assets through medical technical channels. These principles are listed in the following paragraphs.

Conformity

1-11. Conformity with the OPLAN is the most basic element for effectively providing AHS support. In order to develop a comprehensive concept of operations, the medical commander must have direct access to the operational commander. Medical planners must be involved early in the planning process and once the plan is established it must be rehearsed with the forces it supports. In operations with a preponderance of stability tasks, it is essential that AHS support operations are in consonance with the combatant commander's area of responsibility engagement strategy and have been thoroughly coordinated with the supporting assistant chief of staff, civil affairs operations.

Proximity

1-12. Proximity is to provide AHS support to sick, injured, and wounded Soldiers at the right time and the right place and to keep morbidity and mortality to a minimum. Army Health System support assets are placed within supporting distance of the maneuver forces which they are supporting, but not close enough to impede ongoing operations. As the battle rhythm of the medical commander is similar to the operational commander's, it is essential that AHS assets are positioned to rapidly locate, acquire, treat, stabilize, and evacuate combat casualties. Peak workloads for AHS resources occur during the conduct of operations.

Flexibility

1-13. Flexibility is being prepared to, and empowered to, shift AHS resources to meet changing requirements. Changes in plans or operations make flexibility in AHS planning and execution essential. In addition to building flexibility into the OPLAN to support the commander's scheme of maneuver, the medical commander must also ensure that he has the flexibility to rapidly transition from one level of violence to another across the range of military operations. As the current era is one characterized by persistent conflict, the medical commander may be supporting simultaneous actions characterized by different decisive actions, such as offensive, defensive, or stability tasks. The medical commander exercises his command authority to effectively manage his scarce medical resources so that they benefit the greatest number of Soldiers in the AO. For example, there are insufficient numbers of forward surgical teams to permit the habitual assignment of these organizations to each brigade combat team (BCT). Therefore, the medical commander, in conjunction with the command surgeon, closely monitors these valuable assets so that he can rapidly reallocate or recommend the reallocation of this lifesaving skill to the BCTs in contact with the enemy and where the highest number of Soldiers will potentially receive

traumatic wounds and injuries. As the operational situation changes within that BCT area of operations, the command surgeon and medical commander monitor and execute resupply and/or reconstitute operations of that forward surgical team to prepare for follow-on operations which could be in another BCT's area of operations. This ability to rapidly reset these special skills maximizes the lifesaving capacity of these units, provides the highest standard of lifesaving medical interventions to the greatest number of our combat wounded, and enhance the effectiveness of the surgical care provided and the productivity of these teams.

Mobility

1-14. Mobility is the principle that ensures that AHS assets remain in supporting distance to support maneuvering forces. The mobility, survivability (such as armor plating), and sustainability of AHS units organic to maneuver elements must be equal to the forces being supported. Major AHS headquarters in echelons above brigade (EAB) continually assess and forecast unit movement and redeployment. Army Health System support must be continually responsive to shifting medical requirements in an operational environment. In noncontiguous operations, the use of ground ambulances may be limited depending on the security threat in unassigned areas and air ambulance use may be limited by environmental conditions and enemy air defense threat. Therefore, to facilitate a continuous evacuation flow, medical evacuation must be a synchronized effort to ensure timely, responsive, and effective support is provided to the tactical commander. The only means available to increase the mobility of AHS units is to evacuate all patients they are holding. Army Health System units anticipating an influx of patients must medically evacuate patients on hand prior to the start of the engagement.

Continuity

1-15. Continuity in care and treatment is achieved by moving the patient through progressive, phased roles of care, extending from the point of injury or wounding to the CONUS support base. Each type of AHS unit contributes a measured, logical increment in care appropriate to its location and capabilities. In current operations, lower casualty rates, availability of rotary-wing air ambulances, and other mission, enemy, terrain and weather, troops and support available, time available, and civil considerations (mission variables) factors often enable a patient to be evacuated from the point of injury directly to the supporting combat support hospital (CSH). In more traditional operations, higher casualty rates, extended distances, and patient condition may necessitate that a patient receive care at each role of care to maintain his physiologic status and enhance his chances of survival. The medical commander, with his depth of medical knowledge, his ability to anticipate follow-on medical treatment requirements, and his assessment of the availability of his specialized medical resources can adjust the patient flow to ensure each Soldier receives the care required to optimize patient outcome. The medical commander can recommend changes in the theater evacuation policy to adjust patient flow within the deployed setting. Refer to Chapter 2 for more detail. *Theater evacuation policy* is defined as a command decision indicating the length in days of the maximum period of noneffectiveness that patients may be held within the command for treatment. Patients that, in the opinion of a responsible medical officer, cannot be returned to duty status within the period prescribed are evacuated by the first available means, provided the travel involved will not aggravate their disabilities. (FM 4-02)

Control

1-16. Control is required to ensure that scarce AHS resources are efficiently employed and support the operational and strategic plan. It also ensures that the scope and quality of medical treatment meets professional standards, policies, and U.S. and international law. As the AMEDD is comprised of 10 medical functions which are interdependent and interrelated, control of AHS support operations requires synchronization to ensure the complex interrelationships and interoperability of all medical assets remain in balance to optimize the effective functioning of the entire system. Within the AO, the most qualified individual to orchestrate this complex support is the medical commander due to his training, professional knowledge, education, and experience. In a joint and multinational environment it is essential that coordination be accomplished across all Services and multinational forces to leverage all of the specialized skills within the AO. Due to specialization and the low density of some medical skills within the Military Health System force structure, the providers may only exist in one Service (for example, the United States Army has the only Veterinary Corps officers in the Military Health System).

Warfighting Function

1-17. The AHS supports two warfighting functions as described in ADP 3-0. The HSS is included in the sustainment warfighting function, while FHP comes under the protection warfighting function. The *health service support* is defined as (Joint) all services performed, provided, or arranged to promote, improve, conserve, or restore the mental or physical well-being of personnel, which include, but are not limited to the management of health services resources, such as manpower, monies, and facilities; preventive and curative health measures; evacuation of the wounded, injured, or sick; selection of the medically fit and disposition of the medically unfit; blood management; medical supply, equipment, and maintenance thereof; combat and operational stress control; and medical, dental, veterinary, laboratory, optometry, nutrition therapy, and medical intelligence services. (JP 4-02) (Army) Health service support encompasses all support and services performed, provided, and arranged by the Army Medical Department to promote, improve, conserve, or restore the mental and physical well-being of personnel in the Army. Additionally, as directed, provide support in other Services, agencies, and organizations. This includes casualty care (encompassing a number of Army Medical Department functions—organic and area medical support, hospitalization, the treatment aspects of dental care and behavioral/neuropsychiatric treatment, clinical laboratory services, and treatment of chemical, biological, radiological, and nuclear patients), medical evacuation, and medical logistics. (FM 4-02)

1-18. The Army HSS pertains to the treatment and medical evacuation of patients from the battlefield and required Class VIII supplies, equipment, and services necessary to sustain these operations. Health service support encompasses three components—casualty care, medical evacuation, and medical logistics. These HSS components include—

- The casualty care component of the HSS mission includes all of the treatment aspects of the medical functions. This includes medical treatment (organic and area support), hospitalization, the treatment aspects of dental services, treatment of behavioral health or neuropsychiatric patients, clinical laboratory services and support, and the treatment of CBRN patients. A *casualty* is defined as any person who is lost to the organization by having been declared dead, duty status-whereabouts unknown, missing, ill, or injured. (JP 4-02)
- The medical evacuation component of the HSS mission includes air and ground medical evacuation, medical regulating, and the provision of en route care to patients being transported. *Medical evacuation* is defined as the process of moving any person who is wounded, injured, or ill to and/or between medical treatment facilities while providing en route medical care. (FM 4-02)
- The medical logistics component of HSS is inclusive of all medical logistic functional subcomponents and services.

1-19. The *force health protection* is defined as (Joint) measures to promote, improve, or conserve the mental and physical well-being of Service members. These measures enable a healthy and fit force, prevent injury and illness, and protect the force from health hazards. (JP 4-02) (Army) Force health protection encompasses measures to promote, improve, conserve or restore the mental or physical well-being of Soldiers. These measures enable a healthy and fit force, prevent injury and illness, and protect the force from health hazards. These measures also include the prevention aspects of a number of Army Medical Department functions (preventive medicine, including medical surveillance and occupational and environmental health surveillance, veterinary services, including the food inspection and animal care missions, and the prevention of zoonotic disease transmissible to man; combat and operational stress control; dental services [preventive dentistry]; and laboratory services [area medical laboratory support]. (FM 4-02)

THE ARMY MEDICAL OPERATIONAL PLANNING FACTORS

1-20. Commanders and medical planners should apply the following Army medical operational planning factors in order of precedence for establishing AHS priorities in support of force projection operations. The Army medical operational planning factors are—

- Be there—maintain a medical presence with the Soldier.
- Maintain the health of the command.

- Save lives.
- Clear the battlefield of casualties.
- Provide state of the art medical care.
- Ensure early return to duty. *Return to duty* is defined as a patient disposition which, after medical evaluation and treatment when necessary, returns a Soldier for duty in his unit. (FM 4-02)

1-21. These medical operational planning factors are established to guide commanders and medical planners in designing medical support for the tactical commander. Although medical personnel always seek to provide the full range of AHS in the best manner possible, during every combat operation there are inherent possibilities of conflicting support requirements.

1-22. The rationale for medical operational planning factors is based on the prevention of diseases and injuries and the evolving clinical concept that demonstrates that with timely and adequate medical care the trauma victim's chances of survival are greatly improved.

1-23. Adequate medical care means that the injured Soldier receives prompt medical treatment, in that the Soldier is sufficiently resuscitated and stabilized and that stabilization is maintained during evacuation. The goal of resuscitation and stabilization is to enable a patient's evacuation over greater distances to a rearward medical treatment facility (MTF).

The following paragraph implements Standardization Agreements 2087 and 3204.

1-24. Adequate medical care and stabilization prior to evacuation is a major aspect in determining whether the patient survives. By providing en route medical care, stabilization can be maintained during evacuation. Early medical intervention with the ability to effectively stabilize the casualty must be available as far forward as the situation permits with the ability to medically evacuate the patient within the time constraints prescribe by the Secretary of Defense to an MTF. The evacuation precedence for Army operations at Roles 1 through 3 are—

- Priority I, URGENT is assigned to emergency cases that should be evacuated as soon as possible and within a maximum of one hour to save life, limb, or eyesight and to prevent complication of serious illness and to avoid permanent disability.
- Priority IA, URGENT-SURG is assigned to patients who must receive far forward surgical intervention to save life and stabilize for further evacuation.
- Priority II, PRIORITY is assigned to sick and wounded personnel requiring prompt medical care. This precedence is used when the individual should be evacuated within four hours or if his medical condition could deteriorate to such a degree that he will become an URGENT precedence, or whose requirements for special treatment are not available locally, or who will suffer unnecessary pain or disability.
- Priority III, ROUTINE is assigned to sick and wounded personnel requiring evacuation but whose condition is not expected to deteriorate significantly. The sick and wounded in this category should be evacuated within 24 hours.
- Priority IV, CONVENIENCE is assigned to patients for whom evacuation by medical vehicle is a matter of medical convenience rather than necessity.

Note. The NATO STANAG 3204 has deleted the category of Priority IV, CONVENIENCE. However, this category is still included in the United States Army evacuation priorities as there is a requirement for it in an operational environment.

1-25. Consider the planning for the medical support for an early entry operation where the composition of a task force precludes the deployment of a CSH. A medical support inconsistency now arises between supporting the commander's intent of maintaining a small and nimble footprint and providing optimal medical care to the Soldiers. The conflict can be resolved appropriately by applying medical operational planning factors. Commanders and medical planners must increase the medical presence with the Soldiers to resuscitate casualties and maintain stabilization pending evacuation. Greater reliance on forward

medical assets and increased medical evacuation assets compensates for the inability to employ a hospital into the immature theater.

ROLES OF MEDICAL CARE

1-26. A basic characteristic of organizing and planning for AHS support is the distribution of medical resources and capabilities to facilities at various levels of command, diverse locations, and progressive capabilities, referred to as roles of care. For medical planners to effectively provide mission support to the ground commander they need to understand the full breath of these roles of medical care.

ROLE 1

1-27. The first medical care a Soldier receives is Role 1 (also referred to as unit-level medical care). This role of care includes—

- Immediate lifesaving measures.
- Disease and nonbattle injury (DNBI) prevention. *Disease and nonbattle injury* is defined as all illnesses and injuries not resulting from enemy or terrorist action or caused by conflict. (JP 4-02)
- Combat and operational stress preventive measures.
- Patient location and acquisition (collection).
- Medical evacuation from supported units (point of injury or wounding, company aid posts, or casualty or patient collection points) to supporting MTF.
- Treatment provided by designated combat medics or treatment squads. (Major emphasis is placed on those measures necessary for the patient to return to duty or to stabilize him and allow for his evacuation to the next role of care. These measures include maintaining the airway, stopping bleeding, preventing shock, protecting wounds, immobilizing fractures, and other emergency measures, as indicated.)

1-28. Nonmedical personnel performing first aid procedures assist the combat medic in his duties. First aid is administered by an individual (self-aid/buddy aid) and enhanced first aid is provided by the combat lifesavers.

Self-Aid and Buddy Aid

1-29. Each individual Soldier is trained in a variety of specific first aid procedures. These procedures include aid for chemical casualties with particular emphasis on lifesaving tasks. This training enables the Soldier or a buddy to apply first aid to alleviate potential life-threatening situations. Each Soldier is issued an individual first aid kit to accomplish first aid tasks.

Combat Lifesaver

1-30. The combat lifesaver is a nonmedical Soldier selected by his unit commander for additional training beyond basic first aid procedures. A minimum of one individual per squad, crew, team, or equivalent-sized unit should be trained. The primary duty of this individual does not change. The additional duty of the combat lifesaver is to provide enhanced first aid for injuries, based on his training, before the combat medic arrives. Medical personnel normally provide combat lifesaver training during direct support of the unit. The training program is managed by the senior medical personnel designated by the commander. Members of Special Forces operational detachments receive first aid training at the combat lifesaver level.

Medical Personnel

1-31. Role 1 medical treatment is provided by the combat medic or by the physician, the physician assistant, or the health care specialist in the battalion aid station Role 1 MTF. In Army special operations forces, Role 1 treatment is provided by special operations combat medics, Special Forces medical

sergeants, or physicians and physician assistants at forward operating bases, Special Forces operating bases, or in joint special operations task forces. Role 1 includes—

- Tactical combat casualty care (immediate far forward care) consists of those lifesaving steps that do not require the knowledge and skills of a physician. The combat medic is the first individual in the medical chain that makes medically substantiated decisions based on medical military occupational specialty-specific training.
- At the battalion aid station, the physician and the physician assistant are trained and equipped to provide advanced trauma management to the combat casualty. This element also conducts routine sick call when the operational situation permits. Like elements provide this role of medical care at brigade and EAB.

ROLE 2

1-32. At this role, care is rendered at the Role 2 MTF which is operated by the area support squad, medical treatment platoon of medical companies. Here, the patient is examined and his wounds and general medical condition are evaluated to determine his treatment and evacuation precedence, as a single patient among other patients. Advanced trauma management and tactical combat casualty care including beginning resuscitation is continued, and if necessary, additional emergency measures are instituted, but they do not go beyond the measures dictated by immediate necessities. The Role 2 MTF has the capability to provide packed red blood cells (liquid), limited x-ray, clinical laboratory, operational dental support, combat and operational stress control, preventive medicine, and when augmented, physical therapy and optometry services. The Role 2 MTF provides a greater capability to resuscitate trauma patients than is available at Role 1. Those patients who can return to duty within 72 hours (1 to 3 days) are held for treatment. Patients who are nontransportable due to their medical condition may require resuscitative surgical care from a forward surgical team collocated with a medical company. Refer to ATP 4-02.5 for more information on casualty and patient care. This role of care provides medical evacuation from Role 1 MTFs and also provides Role 1 medical treatment on an area support basis for units without organic Role 1 resources.

1-33. Role 2 AHS assets are located in the—

- Medical company (brigade support battalion), assigned to modular brigades which include the armored BCT, infantry BCT, and the Stryker BCT.
- Medical company (area support) which is an EAB asset that provides direct support to the modular division and support to EAB units.

Note. The Role 2 definition used by NATO forces AJP-4.10 includes the following terms and descriptions not used by United States Army forces. United States Army forces subscribe to the basic definition of a Role 2 MTF providing greater resuscitative capability than is available at Role 1. It does not subscribe to the interpretation that a surgical capability is mandatory at this role. The NATO descriptions are—

- A Role 2 *Basic* MTF must provide the surgical capability, including damage control surgery and surgical procedures for emergency surgical cases, to deliver life, limb and function saving medical treatment. The surgical capability should be provided within medical timelines.
- A Role 2 *Enhanced* MTF must provide all the capabilities of the Role 2 Basic, but has additional capabilities as a result of additional facilities and greater resources, including the capability of stabilizing and preparing casualties for strategic aeromedical evacuation.

The term *basic* and *enhanced* relate to clinical capabilities and do not refer to the level of mobility of the respective MTF. Depending on the mission and operational requirements, a Role 2 basic can be set up as a light and highly mobile MTF, as well as a fixed building or on a naval platform.

ROLE 3

1-34. At Role 3, the patient is treated in an MTF staffed and equipped to provide care to all categories of patients, to include resuscitation, initial wound surgery, damage control surgery, and

postoperative treatment. This role of care expands the support provided at Role 2. Patients who are unable to tolerate and survive movement over long distances receive surgical care in a hospital as close to the supported unit as the tactical situation allows. This role includes provisions for—

- Evacuating patients from supported units.
- Providing care for all categories of patients in an MTF with the proper staff and equipment.
- Providing support on an area basis to units without organic medical assets.

ROLE 4

1-35. Role 4 medical care is found in CONUS-based hospitals and other safe havens. If mobilization requires expansion of military hospital capacities, then the Department of Veterans Affairs and civilian hospital beds in the National Disaster Medical System are added to meet the increased demands created by the evacuation of patients from the AO. The support-based hospitals represent the most definitive medical care available within the AHS.

SECTION II — THE APPLICATION OF ARMY HEALTH SYSTEM

1-36. Army Health System support is provided across the range of military operations and various types of mission support. The dynamics of our responsibilities requires an AHS that is flexible and scalable and able to support the diversity of operations. Providing comprehensive AHS to Army operations requires continuous planning and synchronization of a fully integrated and cohesive AHS. The system must be responsive and effective across the full range of possible operations.

1-37. When considering how AHS plans to support an operation, the medical planner must consider many factors. This includes the scheme of maneuver, as well as the enemy's capabilities, which influence the character of the patient workload and its time and space distribution. The analysis of this patient workload determines the allocation of AHS resources and the location of MTFs.

1-38. To apply these AHS resources medical planners need to consider the AHS principles. These principles are the basics upon which to build support and they apply across all medical functions and are synchronized through medical mission command. These principles provide a context by which a medical planner can design and tailor support to Army operations.

1-39. When the AHS principles are combined with the medical operational planning factors, the medical planner can prioritize activities to reduce morbidity and mortality, maximize patient outcomes, and potentially decrease long-term disability. Army Health Systems are explained in detail in FM 4-02.

1-40. Medical unit commanders and medical planners must be proactive to changing situations and applying the medical operational planning factors as the situations requires. In order to support operations, commanders and medical planners need to apply the medical operational planning factors. These medical operational planning factors are AHS guidelines that apply across all medical functions and are harmonized through medical mission command and close coordination and synchronization of all deployed medical assets through medical technical channels.

Chapter 2

Army Health System Medical Functions

The AHS ten medical functions are aligned with specific medical disciplines or HSS or FHP or sustainment medical tasks. The demands and complexities of the operational environment, requires a robust and scalable functioning medical capability. The functions of the medical mission command system are interrelated, interdependent, interconnected, and rely on synchronization for effective medical support to the deploying, deployed, and postdeployment force. Medical functions are at the heart of the system of systems that provide for the ongoing health and medical care for the Soldier in any AO, 24/7 regardless of mission or location.

2-1. The AHS supports and is in consonance with joint doctrine as described in JP 4-02. However, rather than relying on broad terms to describe medical capabilities, the Army refers to capability packages which align the right mix of medical skills across the ten medical functions to the type of military formation where the support can be found. These descriptions provide the tactical commander with a composite sketch of what medical capabilities are available in his AO and what medical capabilities are available elsewhere in the operational environment. This graduated system of increasing levels of medical capabilities is referred to as the roles of medical care.

2-2. The AHS is a component of the Military Health System that is responsible for operational management of the HSS and FHP missions for training, predeployment, deployment, and postdeployment operations. The AHS includes all mission support services performed, provided, or arranged by the AMEDD to support HSS and FHP mission requirements for the Army and as directed for joint, intergovernmental agencies, and multinational forces. The AHS is a complex system of systems. The systems which comprise the AHS are divided into medical functions which align with medical disciplines and scientific knowledge. These systems are interrelated and interdependent and must be meticulously and continuously synchronized. The ten medical functions are—

- Medical mission command.
- Medical treatment (organic and area support).
- Medical evacuation.
- Hospitalization.
- Dental services.
- Preventive medicine services.
- Combat and operational stress control.
- Veterinary services.
- Medical logistics.
- Medical laboratory services.

SECTION I — MEDICAL MISSION COMMAND

2-3. The complexities of the operational environment, the myriad of medical functions and assets, and the requirement to provide health care across unified land operations to diverse populations (U.S., joint, multinational, host nation, and civilian) necessitates a medical mission command authority that is regionally focused and capable of utilizing the scarce medical resources to their full potential and capacity. The medical mission command organizations (the three types of organizations are described later in this chapter) are designed to provide scalable and tailorable medical mission command from early entry and expeditionary operations that can be expanded and augmented as the theater matures and an operational health care infrastructure is established.

2-4. The medical mission command (with its component medical mission command organizations) is the medical force provider in theater that provides a seamless state of the art health care system across the range of military operations. Detailed information concerning medical mission command organizations is found in FM 4-02.

MEDICAL MISSION COMMAND ORGANIZATION

2-5. Three separate and distinct medical mission command organizations that exist to provide the necessary leadership and professional medical expertise to support and manage the complexities of the operational environment with the myriad of interrelated and interdependent medical functions. These units are the medical command (deployment support) (MEDCOM [DS]), medical brigade (support) (MEDBDE [SPT]), and the medical battalion (multifunctional) and are described in the following paragraphs.

MEDICAL COMMAND (DEPLOYMENT SUPPORT)

2-6. The MEDCOM (DS) is the force provider across operations to diverse populations (U.S., joint, multinational, host nation, and civilian) in theater and across the region. As the force provider, the MEDCOM (DS) commander identifies and evaluates health care requirements over an extended area that may include numerous areas with increased patient densities, transient troop population, varying levels of violence, and significantly different health care requirements. To successfully execute AHS operations, the MEDCOM (DS) commander must have the ability to rapidly task-organize and reallocate medical assets across command and geographical boundaries. The MEDCOM (DS) conserves the fighting strength of the tactical commander through synchronization of AHS operations and with mission command of the MEDBDEs (SPT), medical battalions (multifunctional), or other medical units assigned or attached to the headquarters providing HSS and FHP to tactical commanders and theater forces conducting simultaneous operations across the range of military operations.

2-7. The MEDCOM (DS) maintains a regional focus that encompasses the entire geographical combatant commander's area of responsibility. This necessitates a medical command authority that is regionally focused and capable of utilizing the scarce medical resources to their full potential and capacity. The MEDCOM (DS) partners and trains with host nation and multinational medical units. It establishes a command relationship with the Army Service component command commander and the geographic combatant command commander to influence and improve the delivery of health care and is linked to the theater sustainment command by the medical logistics management center for coordination and planning. The MEDCOM (DS) is assigned to the Army Service component command and is allocated on a basis of one per theater.

2-8. The MEDCOM (DS) provides—

- Mission command of theater medical units providing AHS support within the AO.
- Subordinate medical organizations to operate under the MEDBDE (SPT) or the medical battalion (multifunctional) and to provide medical capabilities to the BCT.
- Advice to the Army Service component command commander and other senior-level commanders on the medical aspects of their operations.
- Staff planning, supervision of operations, and administration of assigned and attached medical units.
- Assistance with coordination and integration of strategic capabilities from the sustaining base to units in the AO.
- Advice and assistance in facility selection and preparation.
- Army medical support to other Services and Title 10, United States Code (10 USC), responsibilities of the commander.
- Coordination with the United States Air Force theater patient movement requirements center for medical regulating and movement of patients from MTFs.
- Consultation services and technical advice in all aspects of medical and surgical services.
- Functional staff to coordinate medical plans and operations, hospitalization, preventive medicine, tactical and strategic medical evacuation, medical logistics, blood management, dental

services, veterinary services, nutrition care services, combat stress control, medical laboratory services, and area medical support to supported units.

- Coordination and orchestration of medical logistic operations to include Class VIII supply, distribution, medical maintenance and repair support, optical fabrication, and blood management.
- Planning and support of single integrated medical logistics manager when designated.
- Veterinary support for zoonotic disease control, investigation and inspection of subsistence and animal medical care.
- Preventive medicine support for medical and occupational and environmental health surveillance, potable water inspection, pest management, food facility inspection, and control of medical and nonmedical waste.
- Legal advice to the commander, staff, subordinate commanders, Soldiers, and other authorized persons.
- Health threats monitoring within the AO and ensuring required capabilities to mitigate threats are identified.
- Religious support to the command. This includes coordinating with the headquarters unit ministry team for required religious support throughout the AO and providing consultation capability to subordinate MEDCOM (DS) ministry teams.
- Minimum essential wartime requirements for personnel and equipment.

2-9. This unit is dependent upon appropriate elements of the theater for religious, legal, force health protection, finance, and personnel and administrative services. Refer to FM 4-02 for more information.

MEDICAL BRIGADE (SUPPORT)

2-10. The MEDBDE (SPT) is a subordinate command element of the MEDCOM (DS). The MEDBDE (SPT) organizes, resources, trains, sustains, deploys, provide mission command, and supports assigned and attached medical units to provide flexible, responsive, and effective HSS and FHP to supported forces conducting joint and simultaneous unified land operations.

2-11. The focus of the MEDBDE (SPT) is mission, enemy, terrain and weather, troops and support available, time available, and civil considerations (mission variables)-driven. A MEDBDE (SPT) may be providing direct support to a tactical commander, while another is providing AHS support to a division/corps headquarters, or theater sustainment forces. The MEDBDE (SPT) coordinates with the MEDCOM (DS) and other headquarters in their AO. External coordination with the combat aviation brigade and general aviation support battalion for medical evacuation support by air ambulances is critical.

2-12. The MEDBDE (SPT) provides—

- Mission command of subordinate and attached units.
- Operational medical team augmentation to Role 2 companies.
- Advice to the commanders on the medical aspects of their operations.
- Medical staff planning, operational and technical supervision, and administrative assistance for subordinate or attached units and hospitals operating in the division or corps AO.
- Coordination with the supporting theater patient movement requirements center for medical regulating and medical evacuation from medical battalion (multifunctional) and hospitals to support theater Army unit's medical treatment facilities.
- Medical consultation service and technical advice in—
 - Preventive medicine (medical surveillance, environmental health, sanitary engineering, and medical entomology).
 - Behavioral health to include combat operational stress control, and neuropsychiatry.
 - Nutrition services.
 - Dental services.

- Veterinary services, including food safety and inspection, animal medicine, and veterinary preventive medical services.
- Medical laboratory support.
- Advice and recommendations for the conduct of civil-military operations.
- Control and supervision of Class VIII supply and resupply to include blood management. When designated by the geographical combatant commander, serves as the single integrated medical logistics manager.
- Joint capable mission command capability when augmented with appropriate joint assets.
- Support as the executive agent for veterinary services.

2-13. The MEDBDE (SPT) is dependent upon theater assets for religious, legal, administration, finance, human resource, transportation services, CBRN and decontamination assistance, and laundry and bath support, Class I ration support, waste disposal and construction, and supplemental transportation requirements.

MEDICAL BATTALION (MULTIFUNCTIONAL)

2-14. The medical battalion (multifunctional) is the battalion-level medical headquarters. It consists of an early entry element and a campaign support element. The medical battalion (multifunctional) provides a scalable, flexible, and modular medical mission command, administrative assistance, logistical support, and technical supervision capability for assigned and attached medical functional organizations (companies, detachments, and teams) task organized for support to BCTs and EABs. The medical battalion (multifunctional) provides Role 2 mission command and provides assets providing Role 2 area support.

2-15. When fully manned, the medical battalion (multifunctional) provides—

- Medical mission command, staff planning, supervision of operation, medical and general logistics support as required, and administration of activities of subordinates in accomplishing the AHS mission.
- Task organization of echelon above brigade health care assets to meet the projected patient workload.
- Coordination of medical regulating and patient movement with the MEDBDE (SPT) intertheater patient movement center or the MEDCOM (DS) theater patient movement center, as required within the AO.
- Consultation, planning, and coordinating air and ground medical evacuation within the battalion AO. Coordinating medical evacuation air evacuation support requirements with the supporting aviation unit, and synchronizing the air evacuation plan into the overall medical evacuation plan.
- Consultation and technical advice on preventive medicine (medical entomology, medical and occupational and environmental health surveillance, sanitary engineering), combat operational stress control and behavioral health, medical records administration, veterinary services, nursing practices and procedures, dental services, and automated medical information systems to supported units.
- Monitoring and supervision of medical logistics operations, to include Class VIII supply or resupply, medical equipment maintenance and repair support, optical fabrication and repair support, and blood management.
- Planning and coordination of Role 1 and Role 2 medical treatment, to include staff advice on a support basis for echelon above brigade units without organic health assets.

2-16. The medical battalion (multifunctional) is assigned to the MEDBDE (SPT) or the MEDCOM (DS). It is allocated as one medical battalion (multifunctional) per combination of three to seven medical companies or ten to fifteen medical detachments or teams. The unit is 100 percent mobile.

COMMUNICATIONS

2-17. The primary communications system utilized by the AHS to integrate, file, and support a comprehensive medical information system enabling lifelong electronic medical records, streamlined

medical logistics, and enhanced situational understanding for Army operating forces is the Medical Communications for Combat Casualty Care. This medical command post information system employs automation and communications equipment to—

- Assist in conserving the fighting strength by integrating medical and occupational and environmental health surveillance data and other health threat indicators. This assists in identifying disease and injury trends which prevent degradation of performance and reduces casualties due to DNBI.
- Provide state of the art medical information management across unified land operations.
- Ensure the capability of rapid strategic deployability in exercising medical mission command by the first-in, last-out principle.
- Ensure the capability to promptly clear the AO (locate, acquire, treat, and evacuate casualties).
- Conduct split-based operation on a continuous basis.
- Provide AHS staff virtual presence at all command levels.
- Provide a lead element with deploying forces and coordinate the arrival of medical assets into an AO.
- Support joint and multinational medical forces as directed, across the full spectrum of operations.
- Interface with Army systems, other Service, Department of Defense (DOD), and Veterans Administration automated systems throughout the operational continuum.
- Allow transfer of images and videos from numerous sensors and platforms, with image compression and transmission technologies enabling better AHS situational understanding in the theater.
- Enable three-dimensional presentation of imagery and graphics with multimedia technology to help commanders visualize their AO for more effective training, planning, rehearsal, and execution.

PRIMARY TASK AND PURPOSE

2-18. Mission command task includes—

- To plan prepare, execute, and assess AHS support across unified land operations.
- To facilitate and enhance a seamless continuum of health care from the point of injury or wounding to definitive care in the CONUS-support base, if required.
- To maximize the use of scarce medical resources.

2-19. Communications task includes—

- To maintain situational understanding of the Army battle command systems and the common operational picture.
- To facilitate the transfer of medical information, to enhance the documentation of medical encounters and exposures to health hazards, and to ensure the compatibility and interoperability of communication systems.

2-20. Task organization task includes—provide a scalable and tailorable medical infrastructure which ensures the right mix of medical capabilities is available to execute the AHS mission. This capability is further enhanced through the modular design of medical units.

2-21. Medical intelligence task includes—facilitate the identification, evaluation, and assessment of health hazards to the deployed force.

2-22. Technical supervision task include—

- To ensure medical standards are established, implemented, and monitored throughout the operational area.
- To provide consultation and support to subordinate medical units or elements.
- To provide a reachback capability to the CONUS-support base in the areas of various medical disciplines and specialties.

2-23. Regional focus task includes—support and facilitate the execution of the combatant commander's theater engagement strategy during unified land operations.

SECTION II — MEDICAL TREATMENT (ORGANIC AND AREA SUPPORT)

ORGANIZATION AND PERSONNEL

2-24. The medical treatment function encompasses Role 1 and 2 medical treatment support. These roles of care are provided by organic assets or on an area support bases from supporting medical companies or detachments. Within the BCTs and EAB medical units, this support is provided by medical companies or troops of brigades or armored cavalry regiments, the medical company (brigade support battalion), and the medical company (area support). In the corps and at the Army-level, it is also provided by the medical company (area support). The area support function encompasses emergency medical treatment, advanced trauma management, routine sick call, emergency dental care, preventive medicine, and combat operational stress control support. At Role 2 MTFs in addition to the Role 1 capabilities, these additional services are available: x-ray, medical laboratory, operational dental care, and patient holding capability.

2-25. Medical companies are assigned a specific geographical area to ensure all personnel receive adequate medical care. Within each company sector, the treatment platoon with its treatment, dental, x-ray, laboratory, and patient holding capability forms the core of the company's support scheme. The treatment squads are employed geographically to best support the troop population. Company ambulances are collocated with medical elements to provide a ground medical evacuation capability or to evacuate patients to the Role 2 MTF established by the area support section of the medical company for further treatment or holding.

PRIMARY TASK AND PURPOSE

2-26. The primary tasks and purposes of the medical treatment (organic and area support) medical function are as follows:

- First aid—decrease the killed in action rate. This task is performed by nonmedical Soldiers performing self-aid, buddy-aid, or combat lifesaver support prior to the arrival of the combat medic or other health care personnel
- Tactical combat casualty care—provides lifesaving intervention at the point of injury or wounding. This task is performed by the combat medic who locates, acquires, stabilizes, and evacuates patients with combat trauma. At echelons above brigade, this is referred to as emergency medical treatment in noncombat operations.
- Advance trauma management—provides physician directed trauma care to stabilize patients for evacuation to the higher role of care. This care is provided at the supporting Role 1 and Role 2 MTF. A Role 2 MTF provides a greater resuscitative capability than is available at Role 1. At Role 2 MTFs, blood, x-ray, and medical logistics are available.
- Forward resuscitative surgery—provides a damage control surgery capability to the point of injury or wounding. This care is provided by a forward surgical team collocated with a Role 2 MTF.
- Routine sick call—provides primary care services as close to patient's unit as possible.
- Patient holding—provides a short-term holding capability (not to exceed 72 hours) to patients requiring minimal care prior to returning to duty.
- Casualty prevention measure—promotes wellness and enhance Soldier medical readiness and to decrease morbidity and mortality. There are no preventive medicine or combat operational stress control assets at Role 1; however, they are available at Role 2.
- Medical evacuation—provides medical evacuation by ground ambulance on an area support basis and to provide en route medical treatment during transport.

SECTION III — MEDICAL EVACUATION

MEDICAL EVACUATION SYSTEM

2-27. Medical evacuation is the system which provides the vital linkage between the roles of care necessary to sustain the patient during transport. This is accomplished by providing en route medical care and emergency medical intervention, if required, and to enhance the individual's prognosis and to reduce long-term disability. Refer to ATP 4-02.2 for a detailed discussion on medical evacuation.

2-28. Medical evacuation occurs at the tactical, operational, and strategic levels and requires the synchronization and integration of service component medical evacuation resources and procedures with the DOD worldwide evacuation system operated by the United States Transportation Command and the Air Mobility Command.

2-29. Army medical evacuation is a multifaceted mission accomplished by a combination of dedicated air and ground evacuation platforms synchronized to provide direct support, general support, and area support within the AO. At the tactical level, organic, or direct support medical evacuation resources locate, acquire, treat, and evacuate. Soldiers from the point of injury or wounding to an appropriate MTF where they are stabilized, prioritized, and, if required, prepare for further evacuation to an MTF capable of providing required essential care within the AO.

2-30. Although the most recognized mission of the Army medical evacuation assets is the evacuation and provision of en route medical care to the wounded, the essential and vital functions of medical evacuation resources encompass many additional missions and tasks that support the military health system. Medical evacuation resources are used to transfer patients between MTFs within the joint operations area and from MTFs to United States Air Force en route patient staging systems, emergency movement of Class VIII, blood and blood products, medical personnel and equipment, and serve as messengers in medical channels.

PLANNING FOR MEDICAL EVACUATION

2-31. Planning medical evacuation involves considering all available forms of transportation and providing appropriate AHS support personnel in the evacuation system to assure continuity of patient care. It also involves planning the routing, controlling evacuation movements, and planning the location of evacuation assets. Planning for the location of evacuation assets is very challenging when complying with the one hour URGENT and URGENT-SURG patient evacuation precedence. Patient control points, ambulance exchange points and an ambulance or litter shuttle system (ambulance loading points, ambulance relay points, and ambulance control points) must be planned. Thorough investigation of all the available lines of communications is an essential prerequisite to such planning.

2-32. The AMEDD does not have dedicated fixed-wing aircraft for evacuation of patients within the AO or to MTFs outside the AO. For additional means of medical evacuation, planning and coordination must be made with the—

- Particular Service controlling aircraft and ships.
- Transportation command controlling other forms of transportation (train, bus, or other transportation asset).

2-33. Coordination with other Services and commands is usually accomplished through medical regulating. The surgeon, however, must forecast the requirements for air and surface evacuation so that coordination for its procurement may be done in advance of the need. Aircraft are requested on the basis of anticipated needs and to meet emergencies such as those occurring in nuclear warfare where CONUS hospitals are filled to capacity.

2-34. Information on calculating patient evacuation requirements can be found in Chapter 4 of this publication.

ORGANIZATIONS

2-35. There are two types of medical evacuation units, ground and air. These organizations are described in detail in ATPs 4-02.2 and 4-02.3.

GROUND AMBULANCES

2-36. The maneuver battalion's medical platoon ambulances provide ground ambulance evacuation support from the supported BCT or from the point of injury to the supporting MTF.

2-37. The medical company provides ground medical evacuation direct support for the BCTs and theater units. Ground ambulance assets are located in the medical company of the brigade support battalion and the medical company (area support) of the medical battalion (multifunctional).

2-38. The medical company (ground ambulance) serves as one of the primary means of evacuating patients from the battlefield by ground. The medical company (ground ambulance) is normally assigned or attached to the medical battalion (multifunctional) or a medical brigade (support) for mission command.

AIR AMBULANCE

2-39. The medical company (air ambulance) provides medical air evacuation for all categories of patients consistent with evacuation precedence and other operational considerations. The medical company (air ambulance) falls under the general aviation support battalion, combat aviation brigade.

PRIMARY TASK AND PURPOSE

2-40. Primary tasks and purposes of the medical evacuation medical function are as follows:

- Allocate, locate, treat, stabilize, and evacuate—clear the AO of casualties and to facilitate and enhance the tactical commander's freedom of movement. This task is performed by the medical crew of the evacuation platform.
- En route care—maintain the patient's medical condition during transport and to provide emergency medical intervention when required. En route medical care provided during medical evacuation must be effective and continuous to prevent interruption in the continuum of care. This is provided by the medical evacuation crew and/or by medical personnel assigned or attached to the crew when the required care exceeds the medical expertise or qualification of the crew.
- Area support—provide medical evacuation support to units without organic medical evacuation assets. This is provided by the ambulance assets from the Role 1 and Role 2 units and by the medical company (ground ambulance) and medical company (air ambulance).
- Emergency movement of medical personnel, equipment, and supplies—provide a rapid response for the emergency movement of scarce medical resources such as critical Class VIII, blood, medical personnel, and medical equipment throughout the operational environment when required by the tactical situation.
- Transfer of patients between MTFs and en route patient staging system facilities—provide a capability to cross-level patients within the theater hospitals and to transport patients being evacuated out of the theater to a staging facility prior to flight departure.
- Medical property transfer—provide a reciprocal procedure to exchange like medical property when patients are evacuated with equipment accompanying them.
- Medical regulating support—provide support to medical regulating activities to ensure vital linkup between tactical evacuation support and the scheduling of patients for evacuation out of theater by strategic aeromedical evacuation

EVACUATION PRECEDENCE

2-41. The initial decision for medical evacuation priorities is made by the treatment element, or the senior nonmedical person on the scene. Soldiers are evacuated by the most expeditious means of evacuation based on their medical condition, assigned evacuation precedence, and availability of medical evacuation platforms. A patient may be evacuated from the point of injury or wounding to an MTF in closest proximity to the point of injury or wounding to ensure they are stabilized to withstand the rigors of evacuation over great distances. The evacuation precedence of United States Army operations at Roles 1 through Role 3 are listed in paragraph 1-24.

RESPONSIBILITIES

2-42. The Service component commander is responsible for medical evacuation at the tactical level and is responsible for executing the medical evacuation of their forces. Strategic aeromedical evacuation is the responsibility of the United States Transportation Command. Department of Defense Directive 5100.01 gives the Army the function of providing intratheater aeromedical evacuation.

2-43. Within Army support to other Services, Army resources may provide ship-to-shore medical evacuation on an area support basis. Medical evacuation from ship-to-shore for deployed United States Navy and United States Marine Corps forces could also be available within the Army's support capabilities.

THEATER EVACUATION POLICY

2-44. The theater evacuation policy is established by the Secretary of Defense, with the advice of the joint chief of staff and upon the recommendation of the theater commander. The policy establishes the maximum period of noneffective days (hospitalization and convalescence) that patients may be held within the theater for treatment. This policy does not mean that a patient is held in the AO for the entire period of noneffectiveness. A patient who is not expected to be ready to return to duty within the number of days established in the theater evacuation policy is evacuated to the CONUS or other safe havens. This is done providing that the treating physician determines that such evacuation will not aggravate the patient's condition. For example, a theater evacuation policy of 7 days does not mean that a patient is held in the theater for 7 days and then evacuated. Instead, it means that a patient is evacuated as soon as possible after the determination is made that he cannot return to duty within the 7 days following admission to a Role 3 hospital.

2-45. The following factors are used in determining the theater evacuation policy—

- Nature of tactical operations. A major factor is the nature of the combat operations. Will they be operations of short durations and low intensity? Will they be operations of long duration and high intensity? Will CBRN and high explosive weapons be employed?
- Number and type of patients. Another factor is the number and type of patients anticipated and the rate of patients returned to duty. Admission rates vary widely in different geographical areas of the world and in different types of military operations. Appendix D discusses historical data on admission rates under varying geographical, climatic, and organization conditions.
- Evacuation means. An important factor is the means (number and type of transport vehicles) available for evacuation of patients from the theater of operations to the CONUS or other safe haven.
- Availability of replacements. Another important consideration is the capability to furnish replacements to the theater. For each patient who is evacuated from theater to CONUS, a fully trained and equipped replacement must be provided.

2-46. Availability and capability of in-theater medical support. Limitations of all AHS support resources, such as insufficient amount and types of AHS support units in the EAB to support the AO and an insufficient amount of medical and nonmedical logistics, will have a definite impact on the theater evacuation policy. The amount and timing of engineering support is also a consideration. For example, engineer support may be needed when establishing hospital facilities and airfields that support medical evacuation out of theater. The more limitations or shortages the shorter the theater evacuation policy.

MEDICAL REGULATING

2-47. Medical regulating is a casualty management system designed to coordinate the movement of patients from point of injury or onset of disease through successive roles of medical care to an appropriate MTF. *Medical regulating* is defined as the actions and coordination necessary to arrange for the movement of patients through the roles of care and to match patients with a medical treatment facility that has the necessary health service support capabilities, and available bed space. (JP 4-02)

2-48. Medical regulating entails identifying the patients awaiting evacuation, locating the available beds, and coordinating the transportation means for movement. Careful control of patient evacuation to the appropriate hospitals is to—

- Effect an even distribution of cases.
- Ensure adequate beds are available for current and anticipated needs.
- Route patients requiring specialized treatment to the appropriate MTF.

2-49. The factors that influence the scheduling of patient movement include—

- Patient's medical condition (stabilized to withstand evacuation).
- Tactical situation.
- Availability of evacuation means.
- Location of MTFs.
- Surgical backlogs.
- Number and location of patients by diagnostic category.
- Locations of airfields, seaports, and other transportation hubs.
- Communications capabilities.

PLANNING FOR MEDICAL REGULATING

2-50. If patients occurred at regular intervals, in constant numbers, at predetermined locations, and with predictable injuries, their evacuation would require little or no medical regulating. Since these circumstances never occur, the medical regulating system operates worldwide to regulate the movement of patients from the United States Army, United States, United States Marine Corps, and United States Air Force to appropriate MTFs. While the concept of medical regulating is simple, its execution becomes quite complex for the following reasons:

- It involves all three military Services, thus requiring careful and detailed coordination.
- Patients require continuous medical care during all phases of evacuation.
- The AMEDD does not have its own long-range evacuation means; therefore, close coordination with the other Services providing transportation is required.

2-51. The mission of the United States Transportation Command Regulating and Command and Control Evacuation System is to combine transportation, logistics, and clinical decision elements into a seamless patient movement automated information system. The United States Transportation Command Regulating and Command and Control Evacuation System is capable of visualizing, assessing, and prioritizing patient movement requirements, assigning proper medical resources, and distributing relevant data to deliver patients efficiently. The system automates the processes of medical regulating (assignments of patients to suitable medical treatment facilities) and strategic aeromedical evacuation during peace, war, and contingency operations.

2-52. The medical regulating system is under the technical supervision of medical regulating officers assigned to all medical mission command headquarters and the CSH. These officers plan and coordinate with the various organizations and agencies who participate in the medical regulating system. Many factors must be considered in controlling the movement of patients. The primary factor is the tactical situation. Conditions are seldom static, and success in achieving the combat mission must remain the primary goal of combat units. Tactical medical regulating is controlled by Service medical regulating officers, theater medical regulating is controlled by the theater patient movement requirements center and the CONUS medical regulating is controlled by the global patient movement requirements center. Additional information can be found in ATP 4-02.2.

2-53. Patient management, therefore, is a dynamic decisionmaking process which must be applied throughout all roles of medical care. It does little good to move a patient from one point to another if the receiving point is not prepared to handle him. Effective patient regulating may prove to be as big a challenge as medical evacuation. For example, patients may not be regulated to a 248 bed CSH with 150 empty beds. Why? There may be many factors that impeded this regulating such as, the matching of patients to available specialties, to appropriate matching of professional staff to patient care requirements, and other considerations.

2-54. Other factors, in addition to the tactical situation, which influence the scheduling of patient evacuation include—

- Availability of transportation.
- On-hand patient mix, specialty capabilities, Class VIII status, medical equipment status, staffing status, associated supply items of other equipment status, pending displacement of the MTFs, or location of MTFs.
- The existing bed status of MTFs (bed occupied and not occupied).
- Surgical backlog of each facility.
- Number and location of patients by diagnostic category.
- Location of airfields or seaports.
- Condition of each patient (is the patient sufficiently stabilized to withstand travel).
- En route care requirements (medical provider and medical equipment).

2-55. The theater evacuation policy affects the number of beds required to support the theater. A patient requiring “x” number of days (not to exceed the maximum number of days per the theater evacuation policy) of hospitalization also requires a bed and a medical staff for the same amount of days. The patient requires this whether the entire period is spent in the theater, or divided between “x” number of days in the theater and “x” number of days in CONUS. The most intensive and demanding medical requirements are experienced during the admission, the initial patient work up, and the resuscitative phase. These requirements remain a theater responsibility, regardless of the theater evacuation policy.

SECTION IV — HOSPITALIZATION

2-56. Specific clinical capabilities as well as the number of hospital beds and locations of the hospitals must be considered. Hospitals must have the clinical capabilities necessary to provide care for the expected number and types of patients generated in the theater. The location of the hospital should be determined based on the relative mobility of the unit and the necessity to establish a logical progression of hospital facilities within the AO.

COMBAT SUPPORT HOSPITAL

2-57. In theater, hospitalization is provided by the CSH operating within the AO. The CSH provides essential care within the theater to treat and return to duty those patients who can be treated within the theater evacuation policy, are stabilized, and then evacuate those patients requiring definitive, convalescent, and rehabilitative care in CONUS or other safe haven. The CSH capabilities include triage and emergency care, outpatient services, inpatient care, pharmacy, laboratory, blood banking, radiology, physical therapy, medical logistics, operational dental care (emergency and essential dental care), oral and maxillofacial surgery, nutrition care, and patient administrative service.

AUGMENTATION TEAMS

2-58. The CSH may be augmented by one or more medical detachment, hospital augmentation teams, or medical teams. These may include—

- Medical detachment (minimal care), provides minimal and convalescent care, nursing, and rehabilitative services in support of Role 3 MTFs.
- Hospital augmentation team (special care), provides the additional health care provider to support operations characterized predominantly with stability tasks. This may include

examination, diagnoses, and treatment for children, women with obstetric and gynecologic conditions, and other categories of patients not within the normal scope of the hospital element.

- Forward surgical team, provides a rapidly deployable, urgent initial surgical service in the BCTs area of operations. Also provides augmentation to the surgical services of the CSH with general surgery and orthopedic surgery capabilities when not deployed forward with medical companies to provide forward resuscitative surgical care and damage control surgery.
- Hospital augmentation team (pathology) provides support to the CSH clinical laboratory and specialty consultative services, as required.
- Hospital augmentation team (head and neck), provides special surgical care for ear, nose and throat surgery, neurosurgery and eye surgery to support of the CSH, plus specialty consultative services, as required. This is the only organization currently authorized a computerized tomography scanner.
- Medical team (renal hemodialysis), performs renal hemodialysis care in support of the CSH and consultative services as required.
- Medical team (infectious diseases), provides infectious disease investigative, takes measures to control the spread of disease, assures access to health services, and provides consultative services the AHS unit to which attached. This team may include or partner with special care teams with a preventive medicine or public health nurse when public health measures are required.

PRIMARY TASK AND PURPOSE

2-59. The primary tasks and purposes of the hospitalization medical function are listed below—

- Hospitalization—provides definitive medical care for Soldiers capable of being returned to duty, and to provide essential care for patients that must be stabilized for medical evacuation out of the AO because they cannot recover within the time period established by the theater evacuation policy.
- Forward resuscitative surgery—provides initial emergency resuscitative surgery and damage control surgery to save life, limb and eyesight.
- Clinical laboratory services—analyze body fluids and tissues, or to identify microorganisms as an adjunct in the diagnosis and treatment of patients and in the prevention of disease.
- Blood bank—manages the classification, collection, processing, storage, shipment, and use of blood and blood components.
- Radiology services—provides radiology support for acute care, interpretation of x-ray images, and provide the final reading and interpretation of all images taken at the facility.
- Pharmacy support—provides general pharmaceutical support (to include all controlled substances); packing and dispensing medication for patient evacuations and discharge to return to duty and other ambulatory patients; provide parenteral admixture services; generating intravenous-quality fluids in the AO; and provide parenteral nutritional solutions.
- Nutrition care—provides hospital food services support for patients and staff; prepares special diets for hospitalized patient; provides support to command health promotion program; and provides nutrition counseling and advice to patients and staff.
- Medical logistics—provides medical supply operations, medical equipment maintenance and repair, optical fabrication and repair, contracting services, regulated medical or hazardous waste management and disposal, and production and distribution of medical gases.
- Patient administration—provides admission and disposition processing; schedule patient evacuation; collect, safeguard, and account for patient's funds and valuables; custodianship of inpatient and outpatient treatment records, redeployment of medical records; maintenance of medical records and files; collecting and reporting medical statistical data; management of casualty reporting and decedent affairs; line of duty investigations; and submission of special reports and other patient related activities.

- Respiratory care—provides support for the patients that require supplementation of oxygen, administration of aerosolized medicines, and general care of the patient with ventilatory compromise.
- Optometry—provides optometry support for glasses, contact lens, or protective mask inserts, and ophthalmological support to perform surgical repair of eye and adnexal injuries.
- Physical therapy—provides services to injured Soldiers to develop, maintain and restore maximum movement and functional ability thereby reducing morbidity.
- Preventive medicine—provides monitoring techniques necessary to investigate, prevent, and mitigate nosocomial infectious outbreaks with the hospital; and provide public health nursing.
- Hospital augmentations—medical treatment facilities may be augmented by one or more medical detachment, hospital augmentation team, or medical team to provide specialized care or assistance as required.

SECTION V — DENTAL SERVICES

2-60. The mission of the dental service support system is to promote dental health; prevent and treat oral and dental disease; provide far forward dental treatment; provide early treatment of severe oral and maxillofacial injuries; and augment medical personnel (as necessary) during mass casualty operations. Refer to FM 4-02.19 and ATP 4-02.5 for additional information.

CATEGORIES OF DENTAL CARE

2-61. There are two primary categories of dental care (operational and comprehensive) that the medical planner needs to be able to plan for in designing a comprehensive AHS support plan.

OPERATIONAL DENTAL CARE

2-62. Dental care provided for deployed Soldiers in the AO is referred to as operational dental care. Operational dental care consists of emergency dental care and essential dental care.

Emergency Dental Care

2-63. Emergency dental care is designed to provide relief of oral pain, elimination of acute infection, control of life-threatening oral conditions (hemorrhage, cellulitis, or respiratory difficulty), and treatment of trauma to teeth, jaws, and associated facial structures. It is considered the most austere form of dental care provided to deployed Soldiers who are engaged in tactical operations.

2-64. Since dentists are not assigned to Role 1 MTFs, the battalion surgeon or physician assistant can provide limited emergency dental treatment until the patient can be seen by a dentist. Common examples of emergency treatment include—

- Simple extractions.
- Temporary fillings.
- Administration of analgesics.
- Administration of antibiotics.

Essential Dental Care

2-65. Essential dental care is generally considered the highest category of operational dental care available in the theater. Essential dental care includes treatments which are performed in order to prevent potential dental emergencies and maintain the oral fitness of Soldiers. Essential dental care enhances the individual Soldier's combat readiness and can prevent lost duty time. It is for these reasons that essential dental care is made readily available. Soldiers who are categorized as dental Class 2 (untreated oral disease) or dental

Class 3 (potential dental emergencies) should receive essential care as soon as the tactical situation and availability of dental assets permit. Emergency treatments performed by dental officers include—

- Definitive restorations.
- Minor oral surgery.
- Exodontic, periodontic, and prosthodontic procedures.

COMPREHENSIVE DENTAL CARE

2-66. Hospital-level dental care consists of those services provided by the hospital dental staff to minimize loss of life and disability resulting from oral and maxillofacial injuries and wounds. The hospital dental staff provides operational dental care, which consists of emergency and essential dental support to all injured or wounded Soldiers, as well as the hospital staff. The dental assets providing this degree of dental care are located within Role 3 MTFs.

PRIMARY TASK AND PURPOSE

2-67. Primary tasks and purposes of the dental services medical function include—

- Comprehensive dental care—restores an individual to optimal oral health, function, and aesthetics. Normally provided in the CONUS-support base.
- Operational dental care—provides treatment in austere environments for Soldiers engaged in tactical operations. Operational care is provided in the AO and consists of emergency dental care and essential dental care.
- Emergency dental care—relieve oral pain, eliminate acute infection, control life-threatening oral conditions (hemorrhage, cellulitis, or respiratory difficulty) and treat trauma to teeth, jaws, and associated facial structures.
- Essential dental care—prevent potential dental emergencies and maintain the overall oral fitness of Soldiers at levels consistent with combat readiness.
- Oral maxillofacial surgery—provides oral maxillofacial surgery capability to minimize loss of life and disability resulting from oral and maxillofacial injuries and wounds within the AO.

SECTION VI — PREVENTIVE MEDICINE SERVICES

2-68. *Preventive medicine* is defined as the anticipation, prediction, identification, prevention, and control of communicable diseases (including vector-, food-, and waterborne diseases), illness, injuries, and diseases due to exposure to occupational and environmental threats, including nonbattle injury threats, combat stress responses, and other threats to the health and readiness of military personnel and military units. (FM 4-02). The mission of the preventive medicine function includes assessing the health threat, identifying and recommending preventive medicine measures, and conducting medical, occupational, and environmental health surveillance. This function falls within the preveue of the force health protection aspect of AHS. Additional information can be found in FM 4-02.17 and ATP 4-25.12.

2-69. Historically, more Soldiers have been rendered noneffective from disease nonbattle injuries than from injury received as a direct result of conflict. Disease and nonbattle injuries are the major health threat during military operations. Preventive medicine DNBI surveillance must include their effects on U.S., multinational, and host-nation forces, and the local populace. As in combat operations, DNBIs are the leading cause of manpower losses during stability tasks. Individual, unit, and field sanitation teams' preventive medicine measures must be stressed and applied. Preventive medicine personnel can identify the diseases and recommend control and preventive measures. Historically, in most U.S. conflicts, three times as many Soldiers have been lost to DNBI than to enemy action. Although disease is no longer expected to be the major cause of death in combat areas, it still accounts for the vast majority of combat noneffectiveness.

2-70. In past conflicts, preventable diseases have severely affected combat operations. Among the diseases historically impacting combat operations are diseases transmitted by arthropods (malaria, dengue, and typhus); and diseases associated with poor sanitations and personal hygiene (such as hepatitis, cholera, typhoid, and dysentery). Preventable nonbattle injuries (cold and heat injuries and altitude sickness) have

also adversely impacted upon past combat operations. At certain times, the occurrence of preventable DNBI has rendered major units combat ineffective.

PROTECTION WARFIGHTER FUNCTION

2-71. Preventive medicine falls under the warfighting function of protection and is concerned with both the enemy threat and the health threat. The enemy threat produces combat casualties. This threat depends on the types of weapons used, the will of the enemy to fight, and other operational concerns. To counter the health threat, comprehensive medical surveillance activities, operational exposure hazard surveillance activities, preventive medicine measures, and field hygiene and sanitation are instituted and should receive command emphasis. Preventive medicine measures can include immunizations, pretreatments, chemoprophylaxis, and barrier creams. Field hygiene and sanitation combines with personal protective measures, to include correctly wearing the uniform and using insect repellent, sunscreen, and insect netting. Soldiers must practice these activities continuously from force projection through the postdeployment process.

ORGANIZATION AND PERSONNEL

2-72. Preventive medicine support consists of preventive medicine units and staff officers. Preventive medicine detachments and teams provide preventive medicine support and consultation in the areas of DNBI prevention, field sanitation, entomology, sanitary engineering, and epidemiology to minimize the effects of environmental injuries, enteric diseases, vector-borne disease, and other health threats. Echelons above brigade staff support consists of preventive medicine staff officers organic to the MEDCOM (DS), MEDBDE (SPT), medical battalion (multifunctional), division and corps surgeon section. These staff officers serve as the commander's principal preventive medicine consultant and environmental sciences advisors.

PRIMARY TASK AND PURPOSE

2-73. The primary tasks and purposes of the preventive medicine function are as follows:

- Disease prevention and control—prevent and control communicable diseases and provide travel medicine, population health management, and hospital acquired infection control.
- Field preventive medicine—provide field sanitation teams, preventive medicine measures, individual Soldier personal protective measures, inspection of potable water and field feeding facilities, and ice and bottled or packaged water in an operational environment.
- Environmental health—provide the monitoring of environmental health related data for the health of, or potential health hazard impact on, a population and on individual personnel; pest and disease vector prevention and control; health threat controls for waste disposal; identification of environmental health hazards and endemic diseases; incident-specific environmental monitoring; and climatic injury prevention and control.
- Occupational health—provide medical surveillance examination and screenings; health hazard education; surely programs; hearing and vision conservation and readiness; workplace epidemiology investigations; ergonomics; radiation protection; industrial hygiene; work-related immunization; Army aviation medicine; health hazard assessment of Army material and equipment; medical facility safety; and workplace violence prevention.
- Health surveillance and epidemiology—provide for the deployment of occupational and environmental health surveillance; Defense Occupational and Environment Health Readiness System; medical surveillance; Medical Protection System; and epidemiology.
- Soldier, Family, community (public) health, and health promotion—provide Soldier health (to include Soldier medical and dental readiness), Family and community (public) health (to include childhood lead poisoning prevention and Family safety), and health promotion programs and services (to include tobacco use cessation, substance abuse prevention, and suicide prevention).
- Preventive medicine toxicology—provides toxicological assessments of potentially hazardous materials, toxicity clearances for Army chemicals and material, and toxicologically based assessments of health risks.

- Preventive medicine laboratory services—provides laboratory certification and accreditation, quality control and quality management, and the Department of Defense Cholinesterase Monitoring Program.
- Health risk assessment—provides capabilities and activities necessary to identify and evaluate a health hazard and to determine the associated health risk (probability of occurrence and resulting outcome and severity) from potential exposure to the hazard.
- Health risk communication—provide capabilities and activities necessary to identify the personnel affected by potential or actual health and safety threats, to determine the interests and concerns that those personnel have about the threats, and to develop strategies for effectively communicating the complexities and uncertainties associated with their health risk.

SECTION VII — COMBAT AND OPERATIONAL STRESS CONTROL

2-74. The tempo of operations has increased dramatically in today's unified land operations. In contiguous and noncontiguous AOs, U.S. forces may be required to fight around the clock in offensive or defensive operations. Leaders must, therefore, ensure that troops are resilient and rested. They must think faster, make decision more rapidly, and act more quickly than the enemy. The demands on all units will be extreme regardless of their position on the battlefield. This may cause stressors in Soldiers that require combat and operational stress control interventions or activities which may be followed by behavioral health practices. The medical planner needs to plan for this function in all phases of deployment. The preventive aspects of the combat and operational stress control medical function are discussed in-depth in Army medical doctrine which addresses the force health protection mission under the protection warfighting function; refer to FM 4-02, ATP 4-25.12 and ATP 4-02.5 for more information.

ORGANIZATION AND PERSONNEL

2-75. In the BCTs, combat and operational stress control support is provided by mental health sections assigned to the brigade support medical company of the brigade support battalion. If required, these resources can receive direct support from the behavioral health personnel assigned to the medical detachment (combat and operational stress control), if augmentation is required. At echelons above brigade, mental health sections are assigned to the medical companies (area support) that are normally assigned to the medical battalion (multifunctional). If required, these resources can be augmented with behavioral health personnel assigned to the medical detachment (combat and operational stress control).

2-76. The medical detachment (combat and operational stress control) is usually assigned to the medical battalion (multifunctional) and provides direct support to the echelon above brigade units. In support of an AO, this unit provides support on an area basis and provides additional support to the BCT as required. The medical detachment (combat and operational stress control) consists of a detachment headquarters and a behavioral health team made up of social workers, clinical psychologist, psychiatrist, occupational therapists, psychiatric nurses, and behavioral health specialists, and occupational therapy specialist. The forward support section consists of a behavioral health team capable of breaking into subteams for battalion or company prevention and fitness support activities. This provides for a total of 12 subteams for each detachment, giving supported commanders more teams and more flexibility in the utilization of those teams.

PRIMARY TASK AND PURPOSE

- 2-77. The primary tasks and purposes of the combat and operational stress control function are as follows:
- Implement combat and operational stress control plans or programs—prevent combat and operational stress reaction.
 - Perform combat and operational stress control unit needs assessment—provide command with global assessment of the unit, with considerations of multiple variables that may affect leadership, performance, morale, and operational effectiveness of the organization.

- Conduct traumatic event management for potentially traumatic event—assist in the transition of units and Soldiers who are exposed to potentially traumatic events by building resilience, promoting posttraumatic growth, and/or increasing functioning and positive changes in the unit.
- Screen and evaluate Soldiers with maladaptive behaviors to rule out neuropsychiatric behavioral health conditions—provide diagnosis, treatment, and disposition for Soldiers with neuropsychiatric or behavioral problems.
- Conduct combat and operational stress restoration and reconditioning programs to include warrior resiliency training—provide Soldiers rest or restoration within or near their unit area for rapid return to duty and to prevent posttraumatic stress disorder.
- Perform command-directed evaluation for Soldier's behavioral health status—determine if a Soldier's mental state renders him at risk to himself or others or may affect his ability to carry out his mission.
- Screen patients with potential behavioral health issues for signs or symptoms of mild traumatic brain injury—rule out mild traumatic brain injury for Soldiers seeking assistance with behavioral health issues. If appropriate, refer individuals for follow-up medical examination.

SECTION VIII — VETERINARY SERVICES

2-78. The United States Army Veterinary Corps is the sole provider of veterinary services to the DOD. The United States Army Veterinary Corps' mission is to execute veterinary service support essential for FHP and HSS and sustain a healthy and medically protected force; train, equip, and deploy the veterinary force; and promote the health of the military community. In some instances limited animal care is provided to multinational partners and host-nation agencies. The U.S. agencies that may be provided this support include—

- Department of Agriculture.
- Department of Commerce.
- Department of Transportation.
- Department of Homeland Security (Transportation Security Agency, United States Coast Guard, United States Customs, United States Border Patrol, and United States Secret Service).
- Department of Justice (Drug Enforcement Agency).
- Department of State.
- Federal Bureau of Investigation.
- Central Intelligence Agency.

2-79. Veterinary personnel may be attached to other U.S. military headquarters or detailed to support nongovernmental agencies while remaining under U.S. military mission command.

VETERINARY FUNCTIONS

2-80. Veterinary services function in three categories. These categories include—

- Food safety, food security, and quality assurance services. This support is a primary means for preventing DNBI to U.S. forces. Services include sanitary inspection and approval of food sources in support of Class A rations and surveillance inspections of food storage facilities. Procurement and surveillance inspections of all subsistence for wholesomeness and quality are an ongoing mission. Surveillance inspections of any subsistence items suspected of CBRN contamination is performed upon request. Veterinary support also includes the preparation and distribution of the Sanitarily Approved Food Establishment for Armed Forces Procurement in the AO and the physical accountability of the food storage facilities.
- Veterinary medical care. Roles 1 and 2 veterinary medical care for animals includes emergency treatment, stabilization, and evacuation. Role 3 veterinary medical care is definitive and comprehensive medical care. Role 3 veterinary medical care is provided to supported units with military working dogs or other government-owned and indigenous animals. The roles of veterinary medical care, surveillance, prevention, and control programs for diseases common to both man and animal are implemented.

- Veterinary preventive medicine. Provides support through prevention and control programs to protect Soldiers from foodborne diseases. Evaluate zoonotic disease data collected in the AO and advise preventive medicine elements and higher headquarters on potential hazards to humans. Establish animal disease prevention and control programs to protect Soldiers and other DOD and multinational personnel from zoonotic diseases. Assess the presence of animal diseases that may impact the CONUS agriculture system if contaminated equipment or personnel are allowed to redeploy. Perform investigation of unexplained animal death to include livestock and wildlife.

PRIMARY TASK AND PURPOSE

2-81. The primary tasks and purposes of the Veterinary services function are as follows:

- Animal medical care—provide medical care for military working dogs and other government-owned animals.
- Food protection—ensure quality, food safety, and food defense of food sources for deployed forces.
- Veterinary preventive medicine—reduce transmission of zoonotic diseases transmissible to man.

2-82. Additional information on veterinary services and support is contained in FMs 4-02 and 4-02.18.

SECTION IX — MEDICAL LOGISTICS

2-83. Medical logistics is distinguished from other logistics in that its products and services are used almost exclusively by the medical system and are critical to the success of the AHS mission. These products and services are used to provide medical support and are subject to strict standards and practices that govern the health care industry in the U.S. Medical logistics is focused on the specialized requirements of a multifunctional Military Health System in order to reduce morbidity and mortality among Soldiers, whereas other logistics are focus upon the sustainment of major end items and general troop support in order to maximize combat power.

2-84. Resupply to the theater is preplanned and defined in appropriate logistical plans. Due to the technical nature of medical logistics system, coupled with the likelihood of a rapidly changing operating environment, medical planners must build flexibility into the plans. The medical logistics planner must have a comprehensive understanding of operations and tactical plans as well as a thorough knowledge of the entire logistics system (including those organizations and activities responsible for specific aspects of support).

2-85. Planning for mobilization of medical logistics units to arrive early in the time-phased force deployment data flow and the buildup of medical logistics support will need to be synchronized to support the flow of the medical force. To enhance Class VIII support, the medical planners will—

- Identify the specified and implied time-phased material requirements necessary to support the operations plan.
- Identify the capabilities, limitations, and requirements of aerial and sea ports of debarkation.
- Ensure coordination for the movement of supplies and equipment.
- Identify pre-positioned stocks in theater.
- Identify host support, if available.
- Identify joint and multinational logistics support requirements to include distribution plan.

2-86. Class VIII supply support (including blood management), optical fabrication, medical maintenance, medical contracting, and health facilities planning are all key aspects of the medical logistics support plan, which is a part of the AHS support plan. When approved, the medical logistics plan becomes a directive to medical logisticians in subordinate commands and serves as a guide for working out the details involved in the provision of Class VIII supply support for the command.

MEDICAL LOGISTICS FUNCTIONS

2-87. The medical logistics mission is to provide support where and when it is required in the fastest, most inexpensive, and most practical way possible. Medical logistic functions include—

- Class VIII medical supplies (medical materiel to include medical peculiar repair parts used to sustain the AHS).
- Optical fabrication.
- Medical equipment maintenance.
- Blood storage and distribution.
- New technology such as oxygen generation, resuscitative fluids production, blood substitutes, and frozen blood.

2-88. The successful operation of the medical logistics system is directly dependent upon—

- Integration with the whole AHS system.
- Supervision by appropriate command surgeons.
- Anticipatory and proactive support rather than reactive support.

2-89. The Class VIII supply function for AHS units operating Roles 1 and 2 MTFs are primarily the management of medical equipment sets and basic ordering for replenishment. The replenishment function within the BCT is performed by the brigade medical supply officer of the brigade support medical company.

2-90. Class VIII support for Role 3 MTFs is a vital part of its mission and includes management of a commodity that must be adapted to specific theater health care requirements and to the distribution plans and capabilities provided by sustainment organizations.

2-91. Field Manual 4-02 discusses the specific characteristics which set the Class VIII system apart from other classes of supply. One such characteristic is the special protection afforded by the Geneva Conventions to medical supplies.

2-92. During port operations and reception, staging, onward movement, and integration AHS units must be capable of operations immediately upon initial entry of forces. Therefore, medical logistics support must be included in planning for port opening and early entry operations. Port operations may also include the issue of AHS unit sets from Army pre-positioned stocks, integration of potency and dated items, refrigerated, and controlled substances with those assemblages. In almost every operation, lessons learned reflect that theater medical logistics units must also provide Class VIII material for unit shortages that were not filled prior to deployment.

PRIMARY TASK AND PURPOSE

2-93. The primary tasks and purposes of the medical logistic function are as follows:

- Medical material procurement—program funding, develop, acquire, and field the most cost-effective and efficient medical materiel support to satisfy material requirements generated by doctrinal and organizational revisions to tables of organization and equipment, as well as user-generated requirements, state-of-the-art advancements, and initiatives to enhance materiel readiness.
- Class VIII management and distribution—provide intensive management and coordinated distribution of specialized medical products and services required to operate an integrated AHS anywhere in the world in peace and through the range of military operations.
- Medical equipment maintenance and repair—perform appropriate maintenance checks, services, repairs, and tests on medical equipment set component equipment items as specified in applicable technical manuals or manufacturer operating instructions.
- Optical fabrication and repair—fabricate and repair prescription eyewear that includes spectacles, protective mask inserts, and similar ocular devices for eligible personnel in accordance with applicable Army policies and regulations.

- Blood management (distribution)—provide collection, manufacturing, storage, and distribution of blood and blood products to echelons above brigade AHS units. Provide distribution of blood and blood products to Role 2 medical treatment facilities and forward surgical teams.
- Centralized management of patient movement items—support in-transit patients, exchange in-kind patient movement items without degrading medical capabilities, and provide prompt recycling of patient movement items from initial movement to the patient's final destination.
- Health facilities planning and management—provide a reliable inventory of facilities that meet specific codes and standards, maintains accreditation, and affords the best possible health care environment for the Soldiers, Family members, and retired beneficiaries.
- Medical contracting support—ensures the establishment and monitoring of contracts for critical medical items and services.
- Hazardous medical waste management and disposal—ensure the proper collection, control, transportation, and disposal of regulated medical waste in accordance with applicable Army and host-nation policies and regulations.
- Production and distribution of medical gases—ensure the production, receipt, storage, use, inspection, transportation, and handling of medical gases and their cylinders in accordance with all applicable regulations.

2-94. For additional information on the medical logistics system refer to FMs 4-02 and 4-02.1.

SECTION X — MEDICAL LABORATORY SERVICES

2-95. The AHS medical function of medical laboratory services include both the clinical laboratories found in Role 2 and 3 MTFs and area medical laboratory. These two types of laboratories are focused on different aspects of the medical laboratory function in their support of the AHS mission.

CLINICAL LABORATORY SERVICES

2-96. All Role 2 MTFs provide basic clinical laboratory services within the AO. They perform basic procedure in hematology, urinalysis, microbiology, and serology. Role 2 MTFs receive, maintain, and transfuse blood products.

2-97. The clinical laboratory in the CSH performs procedures in biochemistry, hematology, urinalysis, microbiology, and serology in support of clinical activities. The CSH also provides blood-banking services.

AREA MEDICAL LABORATORY SERVICES

2-98. The area medical laboratory provides medical laboratory services in theater. The area medical laboratory functions independently of the individual patient care mission of deployed MTFs. This unit's focus is on rapid health hazards identification and assessment within an AO. These operational health hazards include CBRN threat agents, endemic diseases, and other health threats associated with occupational and environmental health hazards. The area medical laboratory tests air, water, soil, food, waste, and vectors (insects, animals) for a broad range of microbiological, radiological, and chemical contaminants. The area medical laboratory is capable of tailoring its deployable assets to meet specific operational objectives and split-based mission requirements. Procedures that cannot be provided in theater may be provided by CONUS bases laboratory assets, and when available, from assets in the host nation. These services still may not be able to provide critical time-sensitive information.

2-99. The area medical laboratory is modularly designed so that individual functional sections or sectional teams may deploy incrementally and independently from the parent base. The area medical laboratory provides the operational commander with real-time or near real-time health hazard assessment capability.

2-100. The identification and evaluation of health hazards in support of joint and combined military operations requires the use of sophisticated techniques and advanced technology. New applicable technologies are available from commercial, industrial, educational institutions, and military research and development facilities within or outside of the AO. The application of area medical laboratory CBRN

agent identification capabilities with existing and evolving nonmedical detection systems enhance the integration, validity, and use of the Army's collective efforts to protect troops from CBRN threats.

2-101. Officer and enlisted laboratory personnel are a diverse group of individuals with a broad range of education and experience in a variety of laboratories ranging from small dispensary laboratories to sophisticated area medical laboratories, medical center clinical or research facilities. In addition to the active forces, many of the wartime laboratory personnel assets will come from the reserve components. The medical planner must consider the diversity of personnel qualifications and experience when developing requirements for realistic laboratory programs. The medical planner should—

- Understand the existing concepts for the allocation of medical laboratory assets.
- Define, in general terms, the capabilities of those assets.
- Examine the factors that may impact upon laboratory resources.
- Determine mechanisms to maintain responsive, effective, and efficient support of the AHS mission.

PRIMARY TASK AND PURPOSE

2-102. The primary tasks and purpose of the medical laboratory function performed by clinical laboratory services include—

- Analysis of medical specimens—provide for the identification, diagnosis, and treatment of diseases and pathogens.
- Blood-banking services—provide laboratory support to type and crossmatch blood specimens for transfusion services. Provide limited testing of blood products.

2-103. The primary tasks and purposes of the medical laboratory function performed by the area medical laboratory include—

- Analytical, investigational, and consultative capabilities—identify CBRN threat agents in biomedical specimens and other samples from the AO. Assist in the identification of occupational and environmental health hazards and endemic diseases.
- Special environmental control and containment—evaluate biomedical specimens for the presence of highly infectious or hazardous agents of operational concern.
- Data and data analysis—support medical analyses and operational decisions.
- Medical laboratory analysis—support the diagnosis of zoonotic and significant animal diseases that impact on military operations.
- Deploy modular sections or sectional teams—interface with preventive medicine teams, veterinary teams, forward deployed AHS units, biological integrated detection system teams, and chemical company elements operating in the AO.

2-104. For additional information refer to FM 4-02 and ATPs 4-02.3 and 4-02.5.

This page intentionally left blank.

Chapter 3

Army Health System Plans and Orders

The AHS planning process is not unique and is the same process that all Army planners use to communicate the commander's vision and synchronize their forces. It is unique in the number and complexity of services and support the AMEDD provides. From estimating the number and types of casualties, to planning for medical evacuation, food inspections, and the support requirements for the treatment of combat injuries and disease, the medical planner has to bring together the numerous medical functions required to support the mission.

SECTION I — PRINCIPLES OF PLANNING

3-1. Planning is the art and science of understanding a situation, envisioning a desired future condition, and laying out effective ways of bringing that future about (ADP 5-0). Planning consists of two separate but interrelated components: a conceptual component and a detailed component. Successful planning requires the integration of both these components. Army leaders employ three methodologies for planning: the Army design methodology, the military decisionmaking process, and troop leading procedures. Commanders determine how much of each methodology to use based on the scope of the problem, their familiarity with it, and the time available (Army Doctrine Reference Publication [ADRP] 3-0). Planning results in a plan or order that communicates the commander's vision and directs actions to synchronize forces in time, space, and purpose for achieving objectives and accomplishing missions.

3-2. The Army design methodology is a methodology for applying critical and creative thinking to understand, visualize, and describe unfamiliar problems and approaches to solving them. The Army design methodology is particularly useful as an aid to conceptual thinking about unfamiliar problems. To produce executable plans, commanders integrate it with the detailed planning typically associated with the military decisionmaking process. Commanders who use the Army design methodology may gain a greater understanding of their operational environments and the problems and visualize an appropriate operational approach. With this greater understanding, commanders can provide a clear commander's intent and concept of operations—both required by mission command. Such clarity enables subordinate units and commander to take initiative. The Army design methodology is iterative and collaborative. As the operations process unfolds, the commander, staff, subordinates, and other partners continue to learn and collaborate to improve their shared understanding. An improved understanding may lead to modifications to their operational approach or an entirely new approach altogether.

3-3. The military decisionmaking process is also an interactive planning methodology. It integrates activities of the commander, staff, subordinate headquarters, and other partners. This integration enables them to understand the situation and mission; develop, analyze, and compare courses of action (COAs); decide on a COA that best accomplishes the mission; and produce an OPORD for execution. The military decisionmaking process applies both conceptual and detailed approaches to thinking but is most closely associated with detailed planning. For unfamiliar problems, executable solutions typically require integrating the Army design methodology with the military decisionmaking process. The military decisionmaking process helps leaders apply thoroughness, clarity, sound judgment, logic, and professional knowledge so they understand situations, develop options to solve problems, and reach decisions. This process helps commanders, staffs, and others think critically and creatively while planning.

3-4. Troop leading procedures are a dynamic process used by small-unit leaders to analyze a mission, develop a plan, and prepare for an operation. Heavily weighted in favor of familiar problems and short time frames, organizations with staffs typically do not employ troop leading procedures. More often, leaders use troop leading procedures to solve tactical problems when working alone or with a small group.

For example, a company commander may use the executive officer, first sergeant, fire support officer, supply sergeant, and communications sergeant to assist during troop leading procedures (ADRP 3-0).

3-5. This manual will not attempt to replicate the information that is already presented in other Army publications that cover this topic in detail. For detailed information on the Army operations process, refer to ADP 5-0, ADRP 5-0, ADRP 6-0, and FM 6-0. These publications define and describe the operations process. They provide the principles commanders and staffs consider to effectively plan, prepare, execute, and continuously assess operations.

SECTION II — ARMY HEALTH SYSTEM SUPPORT PLANNING

3-6. Current AHS planning addresses the management of normal day-to-day operations, while short- and long-range planning core projected operations of successively longer periods. Planning is a continuous process. The medical planner must remain sensitive to the demands for AHS based upon constantly changing situational and operational requirements. During current operations, staffs at all levels (especially higher command levels) must continuously plan for subsequent operations. Regardless of the type of military operation being supported or the level of command providing the support, AHS plans must be made. Plans must be well communicated to be effective. The planner must proceed in an orderly, progressive manner to ensure maximum effort and completeness. The specific time required to plan varies with the type, size, and level of the command concerned. The amount of detail required to plan will also vary with the—

- Type of command.
- Experience of the commander and staff.
- Complexity of the operation.
- Factors such as the participation of other Services, agencies, and multinational partners.
- Time available.

3-7. Planners must develop well thought out plans and validate the plans through rehearsals, field training exercises, and command and staff simulations. The process of thinking through a plan and conducting *What if?* drills by changing critical variables are especially useful. This process allows the medical planner to envision potential results and to anticipate problems. Consequently, the medical planner can become proactive instead of being reactive. The proactive planner can eliminate potential problems before they cause adverse consequences. He has more time to accomplish the required synchronization to adjust operations when adverse consequences arise because he has anticipated problems and has already considered potential solutions. The proactive planner has more time to address unanticipated problems and more time to plan AHS for future operations.

3-8. Effective and timely planning is essential to operate successfully on the battlefield. Failure in the planning process will result in commanders, their staffs, and subordinate units finding they are unprepared to function in military operations. Planners must have the initiative to ask questions that may affect the performance of their units, and they must know their units well enough to answer question when asked.

3-9. A good AHS plan has the following qualities—

- Provides for accomplishing the mission.
- Is based on facts and valid assumptions. All pertinent data has been considered for accuracy, and assumptions have been reduced to a minimum.
- Provides for the use of existing resources. These include resources organic to the organization and those available from higher headquarters.
- Provides for the necessary organization. It clearly established relationships and fixes responsibilities.
- Provides for personnel, materiel, and other arrangements for the full period of the contemplated operation.
- Provides for decentralized execution of the plan. It delegates authority to the maximum extent consistent with the necessary control.
- Provides for direct coordination during execution between all levels.

- Simplicity, it reduces all essential elements to their simplest form and eliminates those elements not essential to successful action.
- Flexibility, it leaves room for adjustments because of operating conditions and, where necessary, stipulates alternate COA.
- Provides for control. Adequate means exist, or are provided, to carry out the plan according to the commander's intent.
- Coordination, all elements fit together, control measures are complete and understandable, and mutual support requirement are identified and provided.

3-10. Planning guidance, the commander provides planning guidance to the staff as required. The frequency, amount and content of planning guidance will vary with the mission, time available, situation, information available, and experience of the commander and staff. The commander may choose to issue initial planning guidance to the staff when the mission to be supported is announced, the commander must take care not to unduly bias running estimates. This guidance is used to direct or guide the attention of the staff in the preparation or revision of the running estimates and serves to expedite the planning process. Planning guidance should include all elements of the commander's intent.

3-11. Basic planning considerations, the commander's intent and the mission assigned to the operating forces must be the basic consideration of all components in their planning for AHS. Army Health System support preparation and planning must be initiated early and designed specifically to support the operation. Certain basic factors and premises must be used for sound AHS planning. Among the most important are—

- Preparing an AHS estimate and a concept of operation.
- Coordinating the efforts of the health services of the component forces, and multinational partners to make maximum use of available resources.
- Planning to assume flexibility for unseen contingencies such as enemy use of weapons of mass destruction.

3-12. Coordination is one of the most essential elements in successful planning. From the beginning, the planner must continuously coordinate the various types of operations with the commander and his assistants. With knowledge of the mission, the current situation, and the objectives, the planner can better plan for the support that will be required. This method enables him to begin the planning for support early and allows him time for more thorough planning. The planner must ask question such as what resources are required, and how to obtain them.

3-13. The medical planner must also coordinate with those staff representatives at the various headquarters who can furnish needed information and must coordinate their plans with his. He must begin early coordination in those areas requiring close AHS interface within the sustainment community. Building the AHS interface as part of the sustainment community is critical. Army Health System depends on the sustainment system for a multitude of support services such as—

- Nonmedical transportation.
- Potable water resupply.
- Liquid waste disposal.
- Direct support and general support maintenance.
- Trash and solid waste disposal.
- Medical intelligence dissemination.
- Mortuary affairs.
- Site support by engineer units.
- Movement control.
- Reconstitution.
- Delivery of Class VIII supplies.
- Assistance in movement of medical units.
- Nonmedical augmentation for patient decontamination operations and in mass casualty situations.

3-14. Commanders and staff must know how, when, and with whom to coordinate and synchronize support both internally and externally. Proficient synchronizers tend to think about what is happening and what will be happening two levels down, two levels up and on each side.

SECTION III — THE ARMY HEALTH SYSTEM ESTIMATE

3-15. The surgeon's responsibility, after the commander provides planning guidance, is to prepare estimates of requirements and descriptions of projects to be undertaken for establishing adequate AHS to support the mission. He prepares this in his role as a special staff officer. The surgeon and his staff make an AHS estimate that may stand alone, or that may be incorporated into the personnel estimate. This estimate forms the basis for the subsequent AHS plan. All AHS possibilities that could affect the successful support of an operation must be considered. The estimate addresses all AHS aspects of the operation and contains both facts and assumptions based on the staff's experience within their area of expertise.

3-16. The commander uses the AHS estimate, along with estimates of other staff sections, in the preparation of his own estimate. After considering all the staff input, the commander completes his own estimate and makes his decision. In the cases of a MEDCOM (DS) or a MEDBDE (SPT) headquarters, the estimate is made by the commander, assisted by his staff, and normally results in the publication of the AHS plan for the command. At lower levels echelons, the estimate is a continuous mental process integrated into the planning process.

3-17. The surgeon and his staff must determine what basic load modification is required, what additional medical skills are required, and any mission-unique training that must occur. The surgeon must know his intelligence element, what medical intelligence is available, how medical intelligence is disseminated, and how to integrate intelligence in general and medical intelligence in particular into Army Health System OPLANs and OPORDs.

3-18. The AHS support mission is the basis for the estimate and is stated clearly in the estimate. It always conforms to the operations in which the supported personnel are engaged.

FORMAT OF THE ARMY HEALTH SYSTEM ESTIMATE

3-19. The process used to prepare an AHS estimate is the same as that used in preparing an operational running estimate. The surgeon and his staff focus on the medical function and how factors can affect the way they are applied and planned for. These estimates may be prepared orally, or in writing. Often, only the staff officer's conclusion or recommendations are presented to the commander.

3-20. An example of an AHS estimate is found in Appendix A. This format is applicable to any echelon of command and can be used under any operational condition. It is lengthy and includes many more details than may be needed in some situations. Army Health System planners should tailor their estimate according to their mission needs. It will need constant revisions as circumstances change, so that planned support is properly provided to the command from the time it is mobilized until it is inactivated.

3-21. The AHS estimate is intended to be a timesaving and integral part of providing adequate support for all types of operations. If the AHS estimate is prepared by the surgeon's staff at the Army Service component commands, corps, or division level, it must support the tactical commander's intent. If prepared by a command such as a MEDCOM (DS), MEDBDE (SPT), or medical battalion (multifunctional), it becomes the estimate of the medical commander assisted by his staff. Normally, estimates at the division surgeon's level are not formal written documents; however, AHS consideration may appear in a written personnel estimate prepared by the assistant chief of staff, personnel, or the battalion or brigade personnel staff officer.

SITUATION AND CONSIDERATIONS

3-22. The AHS support situation consists of facts, assumptions, and deductions that can affect the operation. In this logical and orderly examination of all the AHS support factors affecting the accomplishment of the mission, the medical planner must be familiar with the commander's intent.

The information required includes medical intelligence which is obtained through supporting intelligence channels and from the National Center for Medical Intelligence. Refer to ADRP 2-0 for a discussion on information requirements, priority intelligence requirement, and commander's critical information requirements. The medical planner must be able to conduct a thorough evaluation of the enemy situation and the AO from the standpoint of their effects on the health of the command and the AHS support operations.

AREA OF INTEREST

3-23. The *area of interest* is defined as that area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory. This area also includes areas occupied by enemy forces who could jeopardize the accomplishment of the mission. (JP 3-0). It is a geographic area from which information is required to facilitate planning. The area of interest may fall outside the AO and may or may not be applicable to a particular operation. The area of interest would be of interest in instances where portion of the overall AHS plan fall outside the AO.

CHARACTERISTICS OF THE AREA OF OPERATIONS

3-24. The medical planner should obtain medical intelligence regarding the AO from the supporting intelligence element. This information must be considered in the planning process. The characteristics of the AO influence the number of patients, as well as their location, collection, and evacuation.

Terrain

3-25. Significant consideration of how terrain can influence AHS support operations may include—

- Topography has the same bearing on AHS support as it does on tactical planning. Using terrain to one's advantage may reduce combat casualties therefore decreasing the anticipated patient workload. In AHS support operations, the medical planner should determine the most likely routes a wounded or injured Soldier will use to reach the supporting MTF. This is referred to as the line of patient drift and will normally be over the least hazardous and easiest route to traverse (such as around the base of hills versus climbing over the hill or along established roads or path versus open or rough terrain).
- Natural conditions may favor large populations of insects and arachnids which commonly are vectors of disease; and therefore, could directly increase the incidence of disease. This is particularly true if there are significant waterways and stagnant ponds (such as animal watering holes).
- Mountains, forests, swamps, and urban terrain can be expected to hamper AHS support. Operations at high elevations frequently results in reduced military performance and due to the exposure to low partial pressure of oxygen, can result in acute mountain sickness (hypobaropathy). Soldiers that are allowed to acclimatize prior to operating at higher elevations will have less altitude-related ailments. Transfer of patients from shore to ship is particularly dependent upon coastline and harbor conditions. Availability of roads, landing strips, and railroads will be important in developing evacuation alternatives. Urban operations will tax medical resources in locating, acquiring, treating, and evacuating wounded or injured personnel from debris and rubble, above, below, and at ground level. For more information on operation in urban terrain refer to Army Tactics, Techniques, and Procedures (ATTP) 3-06.11. Terrain factors such as protection, shelter, and water supply are considered in consonance with evacuation alternatives and with the selection of MTF locations. Evacuation medical resources must be augmented when using different terrain. Often when required to traverse difficult terrain, an ambulatory patient will have to be evacuated using a litter and litter bearers because they are unable to navigate through rocky or swampy terrain. In mountain and extreme cold operations, the extended time required to evacuate patients by litter may require the medical planner to establish warming stations along the evacuation route to protect the patient and litter bearers from the effects of the cold.
- An increase in the hospital bed allocation should be considered if the terrain analysis suggests a significant increase in battle injury, wounded in action (WIA), and DNBI admissions or

difficulty in evacuating patients. Preventive medicine units should be tasked to reinforce forward deployed units if disease potential warrants.

- The duration of hazards from CBRN warfare agents may increase in the forest where the air is still and the foliage is thick.

Weather and Climate

3-26. The weather, climate, and the season in the AO may influence the conduct of AHS support operations and may adversely impact on the health of the command. Examples include—

- Climate and the extent of acclimatization to the climate variants influences the incidence of heat-related injuries and other medical conditions that detract from combat unit effectiveness and may also dictate the use and enforcement of work and rest cycles. Refer to ATP 4-25.12 for additional information.
- Tropical, desert, and tundra conditions strongly favor the growth of the arthropod populations that increase the incidence of disease casualties. Preventive medicine elements become increasingly important under such adverse conditions.
- Factors such as humidity, extreme heat, extreme cold, and blowing sand may affect the storage life of medical supplies and equipment.
- Precipitation may affect available water supplies, impact on hospital site selection, and damage unprotected supplies. Rain and snow will have a dramatic effects on roads, evacuation routes and means as well as turnaround and en route times.
- Temperature variations may require special protection of medical supplies and may increase the patient load because of heat and cold injuries. Weather also adversely impacts on the duty performance when Soldiers must operate in mission-oriented protective posture and thus has a direct impact on heat casualty volume. Additionally, requirements for MTFs, supplies, and evacuation medical resources can be expected to increase. Because the rate of deterioration of medical logistics is influenced by both climate and weather, storage facilities must be estimated accordingly. Evacuation alternatives, particularly by air, will be highly influenced by weather conditions.

Enemy Forces

3-27. From his specialized point of view, the command surgeon must consider the enemy's ability to adversely affect the AHS support operations of the command. The enemy's—

- Compliance with the Geneva Conventions could alter the employment of AHS support assets if the enemy is likely to attack the friendly AHS support system, or if he is known to have attacked a medical unit. It could also determine the type of medical care friendly enemy prisoners of war (EPW) can expect to receive if captured.
- Strength, disposition, probable movements, logistic situation, and combat efficiency must be considered to estimate the number of patients requiring medical evacuation and hospitalization.
- Ability to inflict conventional and unconventional CBRN warfare casualties is a concern. The type of enemy weapons employed will influence the number and type of combat casualties. Heavy artillery bombardment, air attack, surprise attacks, increased lethality weapons, effective and agile tactics, guerrilla or terrorist attacks, use of improvised explosive devices and other high explosives, and continuous operations increase combat and operational stress casualties. Supplemental medical evacuation platforms and hospitalization medical resources may be required. Frequently an unpredictable use of improvised explosive devices may delay ground evacuation operations and limit freedom of movement for medical platforms, as ground ambulances may require armed escorts to accompany movement and up armoring of ambulances to enhance survivability.

3-28. Medical capabilities, sanitation discipline, and the health of potential EPW or detainee can be expected to influence the commands medical workload as well as the EPW and detainee patient workload and the FHP portion of the AHS support plan.

Friendly Forces

3-29. A preliminary estimate of medical workloads can be made when the friendly forces strength, combat efficiency, position, weapons, and plan of action are compared with those of the enemy. This comparison considers the tactical commanders plan to determine the location of areas of patient density and the best placement of medical units.

3-30. The enemy's ability to disrupt operations anywhere within the AO of the command must also be considered. Medical units positioned away from the main areas of combat, must be incorporated into base clusters. Units must be positioned logically to ensure maximum security. These facilities are so numerous that in many cases the ideal type of security may not be available. For information on the Geneva Convention for the Amelioration of the Conditions of the Wounded and Sick in Armed Forces in the Field and the U.S. policy on the use of medical personnel in perimeter defense refer to FM 4-02. The threat to these units must not be increased by positioning them close to lucrative targets (such as a command post or ammunition storage facilities).

3-31. The health of the command is an important consideration in making the AHS estimate. Factors that affect patient estimates and indicate command and medical measures that should be considered prior to each operation being planned are as follows:

- Acclimation of troops.
- Presence of disease.
- Status of immunizations, chemoprophylaxis, pretreatments, barrier creams, and insect repellents.
- Status of nutrition.
- Adequacy of clothing and equipment.
- Physical conditioning.
- Oral health fitness level.

Strengths to be Supported

3-32. The strengths to be supported may be shown in a matrix where the personnel strength is broken down into categories indicating the types and amounts of support to be required. These categories may include United States Army; United States Navy; United States Air Force; United States Marine Corp; United States Coast Guard; civilian contractors; multinational forces; EPWs; indigenous civilians; retained persons; dislocated civilians; and civilian internees. Various experience rates are applied against these strengths to estimate the expected patient workload. The detail in which the tabulation is prepared varies with the scope and type of the operation. A sample matrix is provided in Table 3-1 on page 3-8. Using checkmarks, the medical planner can use this tool to graphically depict what type of support is provided to each population group or to indicate subpopulation group to be supported for specific services.

Table 3-1. Sample strengths to be supported matrix

<i>Strengths to be supported matrix</i>										
<i>Supported unit/element</i>		<i>Casualty care</i>							<i>Medical evacuation</i>	<i>Medical logistics</i>
<i>Type</i>	<i>POP</i>	<i>ROLE 1</i>	<i>ROLE 2</i>	<i>ROLE 3</i>	<i>PVNTMED</i>	<i>DENT</i>	<i>COSC</i>	<i>LAB</i>		
ARMY										
USAF										
USN										
USMC										
USCG										
MULTI-NATIONAL										
HOST NATION										
DOD CIVILIANS										
DOD CONTRAC-TORS										
EPW										
RETAINED										
DETAINED										
OTHER										
Legend: COSC combat and operational stress control PVNTMED preventive medicine DENT dental preventive medicine USAF United States Air Force DOD Department of Defense USCG United States Coast Guard EPW enemy prisoner of war USMC United States Marine Corps LAB laboratory USN United States Navy POP population										
Note: Fill in the population supported by unit/element supported and anticipated population by Role of Care.										

Civilian Considerations

3-33. Dislocated persons and other civilian subpopulations in both rural and urban environments will occur when combat or civil disturbances occur. The EPWs, detainees, dislocated civilians, and other civilian populations also tend to be sources of communicable disease (endemic disease to which U.S. forces have not developed immunity). Because cities and towns tend to be located along axis of peacetime economic activity, they invariable confront sustainment units moving on main supply routes and at crossroads of principal highways. Even if a disease outbreak is suspected, bypass of such areas is generally impractical. Dislocated persons populations, if not properly managed by local authorities or military police, also tend to concentrate on major transportation routes.

3-34. Civil affairs and military police have the responsibility of working with the local authorities to manage the movement of dislocated civilian populations. Dislocated civilian operations include the planning and management of dislocated civilian routes, collection points, assembly areas, and camps, normally in support of host nation and intergovernmental organization efforts. They also include foreign humanitarian assistance support to the affected populace. Civil affairs and military police are key

components to the successful planning and execution of dislocated civilian operations. Commanders should seek their involvement early in the planning process. For additional information on civil affairs and military police support to dislocated civilian operations refer to FMs 3-57, 3-39, 3-63, and ATP 3-57.10. Although the medical planner must consider and anticipate the potential requirements for providing health care to civilian populations, the AMEDD does not plan these operations. The commander and staff are responsible for the development of civil-military operations. The assistant chief of staff, civil affairs operations is responsible for assisting in the development of these plans, coordinating and synchronizing civil affairs capabilities supporting the operations, based on the goals and end states of the mission. Therefore, it is imperative that the command surgeon and medical commander establish a close liaison with the supporting civil affairs elements to coordinate the development of the health aspects for the civil-military operations.

3-35. Preventive medicine teams could be tasked to assist local authorities to reestablish essential civilian sanitary services or to provide preventive medicine support to dislocated civilian camps, when directed. This mission is usually conducted as foreign humanitarian assistance.

3-36. Veterinary units may be used to assist in the control of zoonotic diseases that present a risk to the human population or to agriculture in the AO. Veterinary units may also inspect subsistence fed to dislocated civilians, EPW, and detainees to prevent foodborne diseases, as required.

3-37. If medical resources permit, MTF or medical treatment and holding cot allocations could be increased to accommodate known or suspected outbreak of disease. Augmentation of medical resources with the deployment of a medical detachment, minimal care, can rapidly expand the unit's holding capacity.

3-38. Class VIII could similarly be accumulated in anticipation of a larger demand. If foreign humanitarian assistance or other missions in support of the civilian population are anticipated, the medical planner should ensure arrangements are being made with the United States Army Medical Materiel Agency to obtain the medical equipment set humanitarian assistance. If there are significant requirements for the health care delivery to the civilian population anticipated, the medical planner should request augmentation from other medical units within the medical command such as the hospital augmentation team, special care. This team can provide medical specialty care for pediatric and geriatric patients. It is essential that the medical planner coordinate with the supporting staff judge advocate on limitations and prohibitions of 10 USC on the use of military medical supplies for civilian populations. Additionally, eligibility for medical care matrix should be developed, in conjunction with the staff judge advocate, for dissemination throughout the command's MTFs.

Other

3-39. This section may include any pertinent information that may assist in the estimation process. The following paragraphs provide topics that may or may not be used.

Flora and Fauna

3-40. Certain kinds of arthropods, animal diseases, and toxic plants encountered in the AO may also contribute to the noneffective rate of the command. Orientation of personnel and safeguards against arthropods, animals, and vegetation may be necessary. Medical intelligence of the AO should contain this type information.

Disease

3-41. The effects of major diseases are delayed because of incubation periods. Knowledge of potential losses to malaria, dengue, sand fly fever, typhus, *Escherichia coli* diarrhea, hepatitis A, hepatitis B, hepatitis C, and other endemic disease (a disease that is constantly present to a greater or lesser degree in a certain population or region) is invaluable in determining appropriate preventive and control measures. These measures include requirements for basic personal protective measures, immunizations, chemoprophylaxis, barrier creams, pest management, or other appropriate measures. Should time not allow for preventive measures; disease information will be essential in estimating disease rates and for projecting strength changes in maneuver units.

3-42. If disease is expected to exert a significant impact on the force, consideration should be given to projecting changes in the strength of subordinate components not only for combat losses expected during the operation of concern, but also from disease losses that will exert their operational impact during existing and future operations. The return to duty rates of a WIA and DNBI cases are also of primary interest to the commander and the staff.

Local Resources to Include Medical Resources

3-43. The medical planner requires information concerning the availability of local sources of such items as food, ice, water, pharmaceuticals, and medical gases (oxygen and anesthetics).

3-44. Although other units of the command are responsible for procuring food and water, appropriate veterinary elements are responsible for food and bottled water wholesomeness, hygiene, safety, and quality assurance. Preventive medicine units are responsible for inspecting water for portability.

3-45. Availability of pharmaceuticals or medical gases in the area affects supply levels and transportation required for the operation. Procuring pharmaceuticals from local resources is often difficult because of stringent United States Food and Drug Administration guidelines for pharmaceuticals.

3-46. The use of local facilities such as hospitals, medical clinics, and veterinary schools and their associated staffs should be considered. However, strict adherence to the provisions of the Geneva Conventions is required; therefore, the medical commander and command surgeon must coordinate with the staff judge advocate prior to using these resources. The assistant chief of staff, civil affairs operations or the brigade civil affairs operations staff officer staff can provide liaison with indigenous health professionals and organizations.

Chemical, Biological, Radiological, and Nuclear Weapons

3-47. The numbers and types of CBRN casualties depend on the scenario. However, these weapons produce mass casualties whenever they are used, refer to FM 4-02.7/MCRP 4-11.1F/NTTP 4-02.7/AFTTP 3-42.3 for more information. The uncertainty concerning the numbers, types, and extent of injuries from CBRN weapons is made even more complex since injuries from more than one type of these weapons can affect the methods of patient treatment and prognosis. Another example is that acute ionizing radiation exposure increases the morbidity and mortality of virtually all patient types, refer to ATP 4-02.83/MCRP 4-11.1B/NTRP 4-02.21/AFMAN 44-161(I) for triage of radiologically contaminated patients. Such insidious weapons and devices also produce a large number of patients with stress-related injuries whose symptoms may be difficult to distinguish from true signs of injury. Other planning considerations include—

- The assistant chief of staff, civil affairs operations and civil affairs operations staff officer can identify nonmilitary organizations to support AHS support operations under CBRN conditions.
- The CBRN threat must be assessed and included in the overall planning concept to determine how to counter it. All medical units must be prepared to execute coordinated mass casualty plans.
- Medical units will not generally establish themselves in a contaminated environment. However, all units in the theater are at risk of attack. Furthermore, remaining in or entering a contaminated area may be required to provide AHS support. Commanders must ensure that units and personnel are prepared to survive, defend, and continue operations in or near a contaminated area by instituting mission oriented protective posture standards for medical treatment. Presence of critical civilian or host-nation facilities such as nuclear power plants or chemical plants could impact on AHS support operations if industrial accidents or other means disrupts their operation. The Bhopal and Chernobyl incidents are excellent examples.
- Veterinary service personnel will advise all DOD logistics units and user units in the AO on storing subsistence to prevent CBRN contamination, on monitoring and detecting CBRN contamination of rations and, when necessary, on procedures for decontaminating rations to ensure food safety. Refer to FM 4-02.17 and 4-02.18 for additional information.
- Preventive medicine units and all AHS support personnel will be alert for abnormal disease patterns in order to detect effects. The sick Soldier or local population is likely to be the first

indication of CBRN agent use; rapid identification may be critical to the survival of theater forces.

- The area medical laboratory has special capabilities to support AHS units in CBRN environments. The primary mission of the area medical laboratory focuses on the identification and evaluation for health hazards in the AO through accurate field confirmatory laboratory testing of CBRN, endemic disease, and occupational and environmental agents.

SPECIAL FACTORS

3-48. Factors that are not listed elsewhere or items of such importance to the particular operations that they merit special consideration are mentioned. For example, how patients suffering from combat operational stress may affect the operation is a consideration.

ASSUMPTIONS

3-49. An assumption is a supposition of the existing or future course of events, assumed to be true in the absence of positive proof. Assumptions are sometimes necessary to enable the planner to complete the estimate of the situation and to decide on a COA to support the operation. In addition to a statement of facts, logical assumptions are included in this paragraph as a basis for development of the estimate. Subsequently, these assumptions may be deleted or modified as new information becomes available. Assumptions are usually restricted to higher levels of planning and normally apply only to factors beyond the control of friendly forces such as enemy capabilities and weather.

MISSION

3-50. Provide the restated mission resulting from mission analysis. The senior medical commander and command's surgeon and staff is responsible for—

- Analyzing the mission of the command from the AHS perspective.
- Outlining the concept of the AHS operations, assigning tasks, and providing guidance on health care delivery within the operational area and in support of the combat commander's intent and concept of operations.
- Coordinating AHS support with civil affairs, other Services, and multinational forces, other governmental agencies, and international organizations.
- Coordinating AHS support with the host nation by providing medical liaison teams to countries with which the U.S. has medical support agreements or with nongovernmental organizations participating in the operation in concert with civil affairs.
- Anticipating the state of the host-nation civilian medical infrastructure and considering the impact the dislocated civilian population will place on AHS support operations.

COURSES OF ACTION

3-51. As a result of the above consideration and analysis, determine and list all logical COAs which will support the commander's OPLAN and accomplish the AHS mission. Consider all standard operating procedures, policies, and procedures in effect.

3-52. Course of action development is incorporated into the estimate. This process also includes COA analysis and COA comparison. After completing the analysis and comparison, the staff identifies its preferred COA and makes a recommendation. The COA development process is described in ADRP 5-0 and FM 6-0.

ARMY HEALTH SYSTEM SUPPORT ANALYSIS

3-53. The AHS analysis is a logical comparison of the estimated requirements of the command and the support means available for the operation. The estimate may include—

- Patient estimates: Estimates of patients can be prepared from data compiled in paragraph 3 of the AHS support estimate (see Appendix A on page A-1). Patients are estimated as to number,

distribution in time and space, areas of patient density, possible mass casualties, and lines of patient drift and medical evacuation requirements. The medical planner can request access to the Medical and Casualty Estimator (MACE) tool at the United States Army Medical Department Center and School, Capabilities Development Integration Directorate, Computational Sciences Division Web site or by e-mail to usarmy.jbsa.medcom-ameddcscs.mbx.strategic-studies@mail.mil. The MACE is a deterministic and probabilistic model that provides medical and casualty estimates based on parameters such as length of operation and engagements, weather, terrain, and country of operation.

- Support requirements: Requirements are calculated from the estimate of patients and the data contained in paragraph 3 of the AHS support estimate (see Appendix A on page A-1). The medical planner should consider separately the requirements for all medical functions (refer to FM 4-02). Neither the medical resources available nor the allotment of specified units should be considered at this stage in the analysis. Only the AHS support medical resources required to support the commander's OPLAN are determined.
- Medical resources available: Having determined the AHS support requirements, the surgeon staff then considers the resources on hand or readily available to meet the requirements. Maximum use of available personnel and supplies promotes the overall effectiveness of the delivery of AHS support to the command. To ensure all aspects of AHS support are considered, review the following supporting categories—
 - Organic AHS units and personnel: Medical units that are organic components of the command are listed and under each is a statement describing its location, strength, and readiness for action. Professional and specialty personnel capabilities must also be considered.
 - Attached medical units and personnel: Medical units already attached and those that may be readily available, their locations, strengths, readiness, and professional and specialty personnel capabilities are considered.
 - Supporting medical units: Consideration is given here to the evacuation and other support furnished by higher levels as well as from the United States Air Force, United States Navy, and multinational forces.
 - Civil public health capabilities and resources: Host-nation medical personnel and supplies reported by civil affairs as available from civil public health should also be listed. Civilian medical facilities and personnel may be used in some cases to augment military facilities; in other cases the command's surgeon may be requested to give them support. He should be acquainted with their capabilities and potential to provide support. Cultural differences and medical care philosophies can impact on the health care provided. Civil affairs assist in planning for the maximum use of host-nation support. They also assist in carrying out host-nation agreements. Refer to FM 4-02 for more detailed information on Army Health System and the effects of the Law of Land Warfare and medical ethics.
 - Indigenous or retained medical personnel: Consideration is given to the use of indigenous and retained personnel.
 - Medical logistics: The command's surgeon must consider supplies and equipment on hand, immediate resupply availability, the condition of the material and the organization's capability to maintain it. The command's surgeon and staff should also consider the logistics factors for each patient condition code, as it applies to existing operations. The Defense Health Agency, Medical Logistics Division, provides recommendations for clinical, logistics, and program policy, as well as support to medical material development and acquisition processes across the four Services. Their Web site also provides a joint deployment formulary and the advanced wound care formulary.
 - Medical troop ceiling: The medical troop ceiling should be reviewed by the command's surgeon and staff to determine the possibility of securing additional medical support units and personnel. This action should take effect as early as possible to ensure the timely receipt of the required medical assets.
- Course of action: By taking into consideration all support requirements and medical resources available, the medical planner can then determine major problem areas and difficulties. Based on this determination, several possible COAs can be developed and listed which will provide the

necessary AHS support. The planner lists these COAs and considers policies, standard operating procedures, and procedures that will accomplish the support mission. The medical planner should include the following considerations—

- Dependence on evacuation by other Service components and multinational forces.
- Extent to which civilian and contract labor will be required.
- Theater evacuation policy, refer to ATP 4-02.2 for more information.

EVALUATION AND COMPARISON OF COURSES OF ACTION

3-54. In paragraph 3 of the example estimate (Appendix A), the medical planner assesses and compares the various COAs developed. This is done by comparing the COAs to determine which one can best be supported from the AHS perspective. By comparing the possible COAs to their strengths and weaknesses, the staff is able to identify the basic advantages and disadvantages of each and make a recommendation that satisfies the commander's intent and planning guidance. See FM 6-0 for a detailed discussion on this process.

CONCLUSION

3-55. Paragraph 4 of the example estimate represents the end of the estimate process and is the basis for the development of the AHS support plan. The statement represents the medical commander's decision or the command's surgeon staff's recommendation, and serves as a guide to other staff members and subordinates in their planning process. As part of the conclusion the staff addresses the following information—

- Indicates whether the AHS support mission for the operation can or cannot be accomplished.
- Indicates which COA can best be supported from the AHS perspective.
- Lists factors which may adversely affect the health of the command.
- Lists the limitations and deficiencies in the preferred COA that must be brought to the commander's attention.
- May include a COA which is less than desirable, but best supports the command's operations mission with the most economical use of available AHS medical resources.
- Provides a supporting statement if the AHS support mission cannot be accomplished.

SECTION IV — RUNNING ESTIMATE

3-56. As the commander and staff transition from planning to execution they use running estimates to identify the current readiness of the unit in relation to its mission. A running estimate is the continuous assessment of the current situation used to determine if the current operation is proceeding according to the commander's intent and if planned future operations are supportable. The commander and each staff section maintain a running estimate. In the running estimates, the commander and each staff section continuously consider the effect of new information and update the following:

- Facts.
- Assumptions.
- Friendly activities and capabilities.
- Civil considerations.
- Conclusions and recommendations.

3-57. Each staff section builds, maintains, and consolidates their running estimates to provide the commander with a greater understanding and visualization of the operation. The running estimate also helps the staff to track and record pertinent information as well as to provide recommendation to the commander.

3-58. The command's surgeon and staff should continually update the AHS estimate as required to provide information for the running estimate. Refer to FM 6-0 for greater detail on the running estimate.

SECTION V — THE ARMY HEALTH SYSTEM SUPPORT PLAN/ORDER

PREPARATION OF THE PLAN

3-59. Before the medical estimate is complete, the commander of the command's surgeon and staff has started their preparation of the AHS support plan. As each problem is recognized and solved, a part of the plan is automatically defined. These bits of fragmentary information should be disseminated to subordinate command's surgeons and higher command as early as possible to assist them in preparing their plans and estimates. Once the estimate is completed, it defines requirements, identifies medical and determined policies and procedures. Now, specific responsibilities must be assigned in the AHS support plan. An example of an AHS support plan is provided in Appendix C.

RESPONSIBILITY

3-60. Each medical unit and medical headquarters involved in providing AHS support must prepare its own plan. This plan will be based on the commander's intent, the OPLAN and the sustainment support plan of the next higher headquarters.

3-61. The OPLAN is a plan for the conduct of military operations prepared in response to actual and potential contingencies (JP 5-0). An OPLAN may address an extended period connecting a series of objectives and operations, or it may be developed for a single part or phase of a long-term operation. An OPLAN becomes an OPORD when the commander sets an execution time or designates an event that triggers the operation.

3-62. The support plan is an OPLAN prepared by a supporting commander, a subordinate commander, or an agency to satisfy the request or requirements of the supported commander's plan (JP 5-0). For example, the Army forces commander develops a supporting plan as to how Army forces will support the joint commander's campaign or OPLAN. Refer to FM 6-0 for a detailed explanation of OPLANs, OPORDs, support plans, fragmentary orders, warning orders, and annexes to orders.

3-63. The medical commander and the command's surgeon and staff must continually know and be familiar with the plans and general policies of the tactical commander to adapt the AHS support plan to changes. The medical commander must ensure that adequate medical resources are available for the successful accomplishment of the AHS support mission.

PURPOSE AND SCOPE

3-64. The AHS support plan varies in purpose and scope according to the size and complexity of the supported operation. The AHS support plan of a combat battalion, for example, as a minimum includes the location of the casualty collection points and the battalion aid station. The AHS support plan for a division or BCT considers more functions because of the greater extent of support responsibilities.

3-65. The standard format of the plan is detailed and all inclusive to fit the most complex situation. This format is a checklist and guide; only those portions that apply are to be used. Subparagraphs that do not apply or are addressed in the tactical standard operating procedures may be omitted entirely and subsequent subparagraphs numbered accordingly. The planner must exercise caution in determining which subparagraphs are inappropriate to avoid an incomplete plan.

3-66. The OPLAN is used to prepare—

- The medical unit OPLAN or OPORD. Refer to Appendix C for an example.
- The AHS support appendix to the sustainment annex of an OPLAN or OPORD. Refer to Appendix C for an example.

FORMAT

3-67. For formatting and administrative information pertaining to preparing plans and orders refer to FM 6-0.

Chapter 4

Computations

This chapter discusses some of the many different factors, terms, and computation the medical planner can use to develop the AHS estimate.

SECTION I — TERMINOLOGY

BASIC REQUIREMENTS

4-1. The medical planner must know the basic principles and terms used in patient classification and reporting to be able to use the formulas in this chapter and Appendix D. A *patient* is defined as a sick, injured, or wounded Soldier who receives medical care or treatment from medically trained personnel. (FM 4-02)

CASUALTY

- 4-2. A casualty can be defined as any person who is lost to an organization by reason of—
- Having been declared beleaguered (member of an organized element that has been surrounded by a hostile force to prevent escape of its members).
 - Besieged (member of an organized element that has been surrounded by a hostile force for compelling it to surrender).
 - Captured (seized as the result of action of an unfriendly military or paramilitary force in a foreign country).
 - Deceased.
 - Detained (prevented from proceeding or is restrained in custody for alleged violation of international law or other reason claimed by the government or group under which the person is being held).
 - Duty status—whereabouts unknown.
 - Transitory casualty status (applicable only to military personnel, that is used when the responsible commander suspects the member may be a casualty whose absence is involuntary, but does not feel sufficient evidence currently exists to make a definite determination of missing or deceased).
 - Injured.
 - Ill.
 - Interned (definitely known to have been taken into custody of a nonbelligerent foreign power as the result of and for reasons arising out of any armed conflict in which the armed forces of the U.S. are engaged).
 - Missing (not present at his or her duty location due to apparent involuntary reasons and whose location is unknown).
 - Missing in action (a hostile casualty, other than the victim of a terrorist activity, who is not present at his or her duty location due to apparent involuntary reasons and whose location is unknown).
 - Wounded.
- 4-3. Also included are casualty categories, casualty status, casualty type, hostile casualty, and nonhostile casualty.

Note. Once a medical casualty (wounded, injured, or diseased) is treated by the first medical trained person, such as a combat medic, his status as a casualty changes to a patient.

HOSTILE CASUALTY

4-4. A *hostile casualty* is defined as a person who is the victim of a terrorist activity or who becomes a casualty “in action.” “In action” characterizes the casualty as having been the direct result of hostile action, sustained in combat or relating thereto, or sustained going to or returning from a combat mission provided that the occurrence was directly related to hostile action. Included are persons killed or wounded mistakenly or accidentally by friendly fire directed at a hostile force or what is thought to be a hostile force. However, not to be considered as sustained in action and not to be interpreted as hostile casualties are injuries or death due to the elements, self-inflicted wounds, combat fatigue, and except in unusual cases, wounds or death inflicted by a friendly force while the individual is in an absent without leave, deserter, or dropped-from-rolls status or is voluntarily absent from a place of duty. (JP 1-02)

4-5. Hostile casualties include the following:

- Wounded in action—
 - This term describes a hostile casualty other than killed in action who has incurred an injury due to an external agent or cause. The term WIA covers all wounds and other injuries incurred in action whether there is piercing of the body, as in penetration of perforating wound, or none, as in contused wound; all fractures, burns, blast concussions; all effects of CBRN agents; and the effects or exposure to ionizing radiation, or any other destructive weapon or agent.
 - A hostile casualty who requires admission to a MTF or who dies of wounds after reaching an MTF is reported as WIA. Subsequent reporting as died of wounds may be required. The WIA category includes died of wounds received in action, but excludes the killed in action.
 - Individual medical records and morbidity reports received by the Surgeon General include, in addition to WIA, all other individuals wounded or injured in action and treated at MTFs without requiring hospital admission. This includes persons held and returned to duty at MTFs forward of Role 3 hospitals, as well as persons on an outpatient status carded for record only.
- Died of wounds received in action—
 - This term describes hostile casualties who die of wounds or other injuries received in action after having reached an MTF. These cases differ from hostile casualties who are found dead, or who die before reaching an MTF.
 - The criterion is to reach an MTF while still alive. All cases counted as died of wounds received in action are also counted as WIA.
- Killed in action—
 - This term describes a hostile casualty who is killed outright or who dies as a result of wounds or other injuries before reaching an MTF.
 - It provides a basis for distinction between killed in action cases and died of wounds received in action cases. Killed in action cases are not included in the WIA category or in the died of wounds category.
- Missing in action—This term describes hostile casualties whose whereabouts or fate cannot be determined and who are not known to be in an unauthorized absence status (desertion or absent without leave).
- Captured—This term describes all hostile casualties known to have been taken into custody by a hostile force as a result of, and for reasons arising out of, any armed conflict in which U.S. armed forces are engaged.
- Interned—This term describes all hostile casualties known to have been taken into custody by a nonbelligerent foreign power as the result of, and for reasons arising out of, any armed conflict in which U.S. armed forces are engaged.

Note. Missing in action, captured and interned casualties are not usually included in medical statistical records or reports received by the Surgeon General but are reportable to the personnel staff officer and assistant chief of staff, personnel.

NONHOSTILE CASUALTY

4-6. Nonhostile casualty describes a person who is not a hostile casualty, but who is lost to his organization by reason of disease or injury, including persons dying from disease or injury.

PATIENT

4-7. Patient is the generic term applying to a sick, injured, or wounded person who receives medical care or treatment from medically trained personnel. Once a casualty is treated by the first medically trained person (normally the combat medic), he is no longer referred to as a casualty and is subsequently referred to as a patient. A patient may be further classified as an outpatient or an inpatient as follows:

- Outpatient: Outpatient is the term applied to a person receiving medical or dental examination or treatment from medical personnel and is in a status other than being admitted to a hospital. Included in this category is the person who is treated and retained (held) in any MTF (such as a Role 2 facility) other than a hospital (FM 4-02).
- Inpatient: Inpatient is the term applied to a person admitted to and treated within a Role 3 through Role 4 hospital and who cannot be returned to duty within the same calendar day (FM 4-02).

MEDICAL TREATMENT FACILITY

4-8. A *medical treatment facility* is defined as (Joint) a facility established for the purpose of furnishing medical and/or dental care to eligible individuals. (JP 4-02) (Army) Any facility established for the purpose of providing medical treatment. This includes battalion aid stations, Role 2 facilities, dispensaries, clinics, and hospitals. (FM 4-02)

DENTAL TREATMENT FACILITY

4-9. Dental treatment facility denotes a facility established for the purpose of providing dental services to authorized personnel. Area support is provided by the dental company (area support), other dental resources organic to hospitals, and the medical company (area support) or medical company (brigade support battalion).

SECTION II — CLASSIFICATION OF PATIENTS

4-10. For this discussion, patients mean only those cases who have been admitted to hospitals and who cannot be returned to duty within the same calendar day. Patients are classified according to the primary cause of initial admission. They are reported to the Surgeon General in one of the three major classifications: disease, nonbattle injury, and battle injury or WIA. These classifications are further explained as follows:

- When a patient is admitted for unrelated conditions that require admission such as DNBI, the most serious condition present is used as the main cause of initial admission. This primary cause is used in determining the classification.
- When a patient is admitted for several related conditions that require admission, the first condition in the chain of origin is used as the primary cause of admission. This condition governs the classification of the patient.
- A patient who is admitted to a hospital for battle wounds or battle injuries but who also requires treatment for disease or nonbattle injury is, nevertheless, classified as a battle casualty.

- The disease classification includes many disorders not commonly thought of as disease. All patients other than battle injuries or WIA and nonbattle injury cases are classified as disease cases as follows:
 - Patients suffering from behavioral health disorders developed under battle conditions are classified as disease casualties, not hostile casualties. This includes those cases of combat and operational stress reaction and neuropsychiatric disorders which require hospitalization.
 - Patients readmitted as the result of an old traumatism are considered as disease cases. An old traumatism is defined as a case readmitted for a condition that is a result of a previously recorded battle or nonbattle injury incurred in the military service. The term traumatism refers to a condition of ill health caused by an external agent. It includes conditions resulting from acute poisonings (even though taken internally) and from exposure to heat, cold, or light.
 - Patients suffering from reaction to medication (other than acute poisoning) and patients admitted for complication from an injury incurred prior to entering the military service are classified as disease cases.
 - Food poisoning cases except when due to food containing nonbacterial poisons, are classified as disease cases.
 - A hostile casualty patient, who is dropped from medical reports as a disposition to absent without leave is, if readmitted, classified as a disease patient.
- All traumatisms are classified as nonbattle injury except old traumatisms (as defined in above subparagraph), or battle injury or wounds as stated below. Food poisoning due to food containing nonbacterial poisons are classified as nonbattle injury. Injuries due to the elements such as frostbite and immersion injury are considered to be nonbattle injuries even when incurred in combat areas.
- For purposes of medical statistical reporting, a hostile casualty patient (battle injury and WIA) is any patient admitted to a hospital for treatment of injuries or wounds sustained either directly due to enemy action or while engaged in combat and related thereto. A patient admitted as a hostile casualty patient is reported as such so long as hospitalization is continuous and uninterrupted. Except for disposition by transfer to another hospital, discharge of a hostile casualty patient from a hospital terminates his hostile casualty patient status for medical reporting purposes.

ARMY HEALTH SYSTEM SUPPORT FOR OTHER SPECIAL CATEGORY PATIENTS

4-11. Military operations may require AHS support for a wide category of potential patients. These potential demands should be carefully considered in initial planning. Categories that require careful consideration include indigenous allies, friendly and unfriendly civilians, paramilitary organizations, representatives of various U.S. agencies, U.S. civilian contractor personnel, and other individuals that may be entitled to care based on agreements with multinational forces and the host nation. There are fine lines of distinction that must be clarified by the command. For example, wounded unfriendly civilians may be detainees subject to restrictions and regulations which do not apply to EPWs for their treatment.

ARMY HEALTH SYSTEM SUPPORT FOR ENEMY PRISONERS OF WAR

4-12. In accordance with the law of land warfare (refer to FM 27-10), EPW patients should be afforded the same level of medical care as patients of the detaining power. Seriously injured, sick, or wounded EPWs will be evacuated through medical channels, but will be segregated from U.S. and multinational patients. Enemy prisoners of war will be evacuated from the combat zone as soon as possible. They will not be hospitalized in hospital wards with U.S. military patients. Except in emergencies, EPW will be hospitalized in housing equal to that used for U.S. military personnel. Accountability and security of EPW patients will be processed through EPW channels following treatment. Qualified medical retained personnel will be used as much as possible in medical and hygiene work needed for the well-being of EPW. They shall continue to exercise their medical functions for the benefit of the prisoners of war, preferably

those belonging to the armed forces upon which they belong. For more information on AHS support to detainee operations refer to ATP 4-02.46.

SECTION III — PATIENT ADMISSION RATES

4-13. Admission rates are numerical expressions of the relative frequency with which patients are admitted to hospitals from a specified population over a designated period of time. The particular admission rates used in medical planning represent average rates derived from similar experiences in similar operations or those developed by medical planners. The primary types of patients for which admission rates during an operation are WIA and DNBI. The admission rates usually are expressed as the number of admissions to a hospital per thousand average personnel strength per day. Thus, a hospital admission rate of 2.0 per thousand per day for WIA patients would mean that for every thousand personnel involved, two personnel would become hospital patients each day from battle causes.

4-14. Admission rates contained in this publication reflect experience factors derived from past wars. Historical data on AMEDD losses are also contained in Appendix D.

4-15. The admission rate for disease is affected by susceptibility (immunizations, chemoprophylaxis, and other preventive medicine measures), seasonal variations, climate, and environmental factors.

4-16. Casualty rates are determined by the personnel staff officer or assistant chief of staff, personnel. These rates include all of the types of casualties specified in paragraph 4-2. As shown in that paragraph, not all classifications of casualties are medical casualties, such as killed in action, absent without leave, and detained persons. The medical planner is responsible for patient estimates which include only the medical casualties (patients) included in the overall casualty rate. Patient estimates vary within and from echelon to echelon. While a BCT assigned to a division may be engaged in active fighting, other BCTs may not be in contact with the enemy. Elements of sustainment and support troops serving in areas distant from active combat suffer fewer combat-related medical casualties. Current Army operations occur in a layered, non-linear, noncontiguous operational environment, making projection of patient estimates and casualty rates even more critical than in conventional military operations. In order to support the operational environment that is continuously reorganizing joint and combined, new technologies and capabilities must emerge or be established.

4-17. While the strength of support and sustainment troops may approximate the strength of a BCT, which consist of artillery, engineers, signal, and other support troops; the combat-related medical casualty rates for all of these are low compared with the BCT. These factors operate to reduce the patient estimates of a theater as a whole far below those of its BCTs actively engaged with the enemy. Other differences include—

- As a rough estimate, it may be stated that the WIA rate for a theater as a whole is about 25 less than the WIA rate for its component BCTs.
- Likewise, the overall theater casualty rates are even lower than those of a corps. The WIA rate for the theater is roughly 20 percent lower than the WIA rate for a corps, and about 40 percent lower than that for a division.

Note. These assumptions do not take into account CBRN attacks or incidents.

4-18. Estimation of probable patients in advance is not a simple matter that can be reduced to a general formula. The first step in estimating probable patient rates is to select a point of departure. This may be termed an average patient day for the unit concerned.

4-19. To this average patient day must be applied the quantitative combined effect of all factors in each situation that may be expected to influence the patient estimate. The following are the more important of these factors:

- Enemy capabilities: These include all the resources and characteristics of the enemy that can be translated into combat-related medical casualties, such as the enemy's—
 - Weapons.
 - Air power.

- General combat efficiency.
- Morale.
- Terrain: Terrain is not to be confused with position. Open terrain that affords little cover or protection may favor one side depending upon situation.
- Scheme of maneuver: A very important factor in determining the estimate. An attack is usually more costly than a defense. Losses in the defense are mitigated by the type of defense, the degree of organization of the defense, and the firepower of both sides. Frontal attacks, in general, produce more casualties in the attacking force than do envelopments. Daylight retrograde movements are extremely costly; when the retrograde movements become disorderly, losses may be very high.
- Firepower: A preponderance of friendly firepower, especially in armored forces and air strength, will greatly decrease the capability of the enemy to inflict casualties by depressing or destroying their weapon systems. Conversely, relative weakness in armored firepower will increase casualty rates.

4-20. In preparing estimates of patients, the medical planner must remember that disease incidence continues during combat and the Soldiers are always vulnerable to DNBI. The admission rate during combat for DNBI may even rise above the average for the following reasons:

- Necessity for haste causes a disregard for ordinary precautions like proper risk avoidance procedures (use of personal protective equipment, eye protection, and seat belts and other safety equipment), and preventive medicine and field hygiene practices.
- Physical fatigue can increase the occurrence of psychiatric disabilities by decreasing resistance to the emotional stresses of combat. It can also impair judgment and lead to incidences that may cause injury.

4-21. The proportion of a command actively engaged in combat determines, to a considerable degree, the casualty rate of the unit as a whole. Each situation must be studied and an estimate made for each major fraction of the command rather than one estimate for the command as a whole. Medical planners should base their estimates of probable casualties and nonbattle losses based on the strength and weaknesses of the organization.

SECTION IV — PATIENT ADMISSION RATE COMPUTATION

4-22. Rates as used in military medicine, the term is a numerical expression of the number of times a particular event occurs in a specified population during a given period of time. Types of rates determined are admission rates, mortality rates, incidence rates (specific diseases), prevalence rates, medical noneffective rates, and fatality rates. Through the use of rates, it is possible to make direct, ready, and meaningful comparisons of events related to different time periods and/or different populations.

4-23. Admissions represent a general class of which there are many subclasses in terms of the reasons for admission to an MTF. Rates may be based on admissions due to the following:

- Disease (disease admission rate).
- Nonbattle injury.
- The combination of DNBI (all nonbattle causes admission rate).
- Battle injury and wounds.
- A combination of all the above causes (all causes admission rate).

4-24. Admission rates may also be computed for admissions due to a particular cause, such as a specific disease. More information on calculating rates can be found in Appendix D.

SECTION V — CALCULATION OF PATIENT EVACUATION REQUIREMENTS

4-25. This section presents a methodology for calculating the time and the number of units of transport required to evacuate a given number of patients or to support a specific operation.

TIME FACTORS

4-26. When actual travel speeds are known they should be used. The following time factors are planning estimates and include patient loading and unloading times:

- Litter squads—
 - Four-person squad over average terrain, 900 meters and return in 1 hour.
 - Six-person squad over mountainous terrain, 350 meters and return in 1 hour.
- Ground ambulance—
 - High mobility multipurpose wheeled vehicle and mine-resistant ambush protected vehicle—
 - Improved road 45 miles per hour (mph).
 - Unimproved road 30 mph.
 - Stryker medical evacuation vehicle—
 - Improved road 60 mph.
 - Cross country 40 mph.
 - Tracked (M113)—
 - Improved road 40 mph.
 - Cross country 15 mph.
- Army air ambulance—
 - HH-60 and UH-60 – Airspeed of 120 knots or 138 miles per hour (1 knot = 1.15 miles per hour).
 - UH-72 – Airspeed of 120 knots or 138 miles per hours.

COMPUTATIONS

4-27. The following formulas may be used to calculate the time and the number of ambulances needed to transport a given number of patients:

- Time required.

$$T = (N \times t) / (U \times n)$$

- Units required.

$$U = (N \times t) / (T \times n)$$

- Where:

N = Total number of patients to be evacuated.

n = Number that can be transported in one load.

T = Total time.

t = Time required for one round trip.

U = Number of units of transport (litters, ambulances, or other vehicles).

4-28. The amount of evacuation resources required to support a specific operation may be calculated by using the following formula for either WIA or DNBI patients:

- Ambulance requirements by type per day.

$$([A \times B] \times E) / (C / D)$$

- Where:

A = The total patients (WIA or DNBI) generated for specific operation per day. This figure may be calculated using projected figures for the specific AO.

B = The percentage of those patients “A” requiring evacuation. Normally, this figure will exceed 100 percent as recognition of the fact that many patients will need to be moved more than once. The number of times a patient will be moved will depend on several factors. In assigning a specific percentage as a planning factor, the medical planner must consider several factors. Those factors may include; the terrain, road network and condition, available assets, threat, weather, evacuation distance and MTF location.

C = The average number of patients moved by an evacuation asset in one load. This number will vary depending on the type of ambulance (air or ground) used and the specific model or configuration used.

D = The average number of missions a particular ambulance can complete per day.

E = The dispersion allowance for the specific types of evacuation vehicles in the formula. The dispersion allowance is recognition that a specific percentage of vehicles in the force will be unavailable for missions due to maintenance, crew rest, combat loss, or replacement lag time. The medical planner will determine the specific percentage used by reviewing maintenance historical data and considering the threat in terms of the enemy, terrain, and weather. The accepted dispersion factor for planning purpose is 1.25 with a corresponding dispersion allowance of 20. This is based on approved planning scenarios used in the Total Army Analysis. It is unlikely to be higher due to unit and bed resource constraints. It is also unlikely to be lower because it would limit the unit's flexibility.

Planners will have to take into account that patients may be dispersed across the battlefield and that multiple collection sites may be required, and that an ambulance may not always take a full load of patients on every sortie due to patient condition and evacuation precedence.

EXAMPLE PROBLEM

4-29. To determine the requirement for air or ground ambulance assets to support a specific operation the medical planners have to determine information necessary to compute the problem. Complete the calculation for air and ground evacuation vehicles by using formulas provided in the preceding paragraphs. All fractions are rounded up to the next whole number as you cannot have a fraction of a patient, an ambulance or a mission. Compare the answers to the solutions provide in paragraphs 4-32 and 4-33.

4-30. Using the information below, calculate air ambulance requirements:

- Type of patients:
 - DNBI 145.
 - WIA 216.
- Patients by type requiring air evacuation:
 - DNBI 120 percent.
 - WIA 180 percent.
- Average number of patients per mission: 3.
- Average number of mission per helicopter per day: 11.
- Dispersion allowance: 20 percent.

4-31. Using the following information, calculate ground ambulance requirements:

- Types of patients:
 - DNBI 145.
 - WIA 216.
- Patients by type requiring ground evacuation:
 - DNBI 130 percent.
 - WIA 70 percent.
- Average number of patients per mission: 4.
- Average number of trips per ambulance per day: 6
- Dispersion allowance: 20 percent.

EXAMPLE SOLUTIONS

4-32. Calculate air ambulance requirements:

- Type of patients:
 - DNBI 145
 $\times 1.20$
 174 Patients requiring air evacuation.
 - WIA 216
 $\times 1.80$
 389 Patients requiring air evacuation.
 - DNBI 174
 - WIA $+ 389$
 563 Total patients requiring air evacuation.
- $563 / 3$ patient per mission = 188 missions.
- $188 / 11$ mission per day = 17 aircraft.
- 17×1.25 dispersion factor = 21 air ambulances required.

4-33. Calculate ground ambulance requirements:

- Type of patients:
 - DNBI 145
 $\times 1.30$
 189 Patients requiring ground evacuation.
 - WIA 216
 $\times .70$
 152 Patients requiring ground evacuation.
 - DNBI 189
 - WIA $+ 152$
 341 Total patients requiring ground evacuation.
- $341 / 4$ patient per mission = 86 missions.
- $86 / 6$ mission per day = 15.
- 15×1.25 dispersion factor = 18 ground ambulances required.

SECTION VI — AUTOMATED METHODOLOGIES**DEVELOPMENT OF AUTOMATED METHODOLOGIES**

4-34. The United States Army Medical Department Center and School has developed two automated systems—MACE tool and the DNBI calculator which can assist medical planners with medical and casualty estimation. To access these methodologies, an Army Knowledge Online account is required. The requesting individual must contact the Computational Sciences Division for access to the tool. Medical planners who use these tools to assist in estimating casualties should provide both positive and negative feedback to the Computational Sciences Division at the Web site (listed in the reference section of this publication) or by e-mail to usarmy.jbsa.medcom-ameddcs.mbx.strategic-studies@mail.mil.

MEDICAL AND CASUALTY ESTIMATOR TOOL

4-35. The MACE tool provides deterministic casualty estimates based on the work of The Dupuy Institute and user input to describe the scenario. After determining the casualties, probabilistic distributions, derived from empirical data from recent combat operations, are used to determine medical requirements. The casualty calculations in the MACE are based on user inputs for elements such as friendly and enemy populations at risk; phases of operations; types of operations; terrain; weather; enemy posture; and relative strength of the opposition, surprise and patterns of operations. For the probabilistic simulation, the MACE draws force-size specific casualty rates (such as divisional) and applies these rates to the specified

populations at risk over the specified days. The battle injury casualties generated by the MACE are then assigned characteristics via sampling such as cause agent; mechanism of injury; World Health Organization, International Statistical Classification of Diseases and Related Health Problems code; evacuation precedence; and more. These characteristics then generate requirements that the medical planner may use to predict treatment and evacuation requirements. The MACE output can be used by the planner to aid in producing the medical plan. *Battle injury* is defined as damage or harm sustained by personnel during or as a result of battle conditions. (JP 4-02)

4-36. For the medical estimation sampling, conditional probability distributions are used to derive characteristics representing the patient's predicament. First mechanism of injury is determined which is the physical phenomenon that caused the injury to include blunt, burn, explosion, penetrating, and other.

4-37. Once the mechanism of injury is determined sampling from a second conditional probability distribution is used to derive the cause of injury which defines the munition, equipment, or physical process providing more detail to the mechanism of injury.

4-38. After the cause of injury is determined sampling from a third conditional probability distribution is used to derive the nature of injury.

4-39. After the nature of injury is determined sampling from a fourth conditional probability distribution is used to derive the damaged body region.

4-40. Sampling from a fifth conditional probability distribution based on the combination of the nature of injury and the body region is used to assign the International Statistical Classification of Disease codes to the patient.

4-41. An injury severity score is assigned to a patient to the grouping of the International Statistical Classification of Disease codes. For DNBI, the MACE tool provides a deterministic method based on location and month as well as a probabilistic model based on a verified and validated frequency distribution generated from Operation Iraqi Freedom.

4-42. For DNBI patients sampling from a probability distribution determines the specific category of DNBI patient. Sampling from a conditional probability distribution based on the DNBI category is used to derive the disposition of the DNBI patient.

DISEASE AND NONBATTLE INJURY CALCULATOR

4-43. The DNBI calculator is a Web-enabled internet application which enables AMEDD leaders and planners to access updated DNBI and battle injury (battle injury also refers to WIA) admission rates. The United States Army Medical Department Center and School has developed a methodology to estimate United States Army DNBI and WIA admission rates based on recent Soldier deployments and used the analysis to develop DNBI and WIA models for medical deployment and force structure planning. The models take into account the geographic location and phase of the operation, and the size and composition of the deployed force. The DNBI and WIA models for medical deployment and force structure planning. The DNBI and WIA hospital admission rates are an obligatory requirement from the United States Army Medical Department Center and School to Director, Force Management (Army assistant chief of staff, operations) and Center for Army Analysis (Army assistant chief of staff, financial management) for use in the Total Army Analysis process. The DNBI and WIA calculator is updated quarterly with the latest data-driven admission rates estimates. The recent update included an expanded analysis of all patient types to describe more accurately utilization of United States Army Role 3 facilities. The DNBI and WIA application consists of nine modules that give the user the ability to obtain a wide variety of reports. The Web tool provides medical planners the 95th percentile daily hospital admissions for user selected operation and troop strength (including profiling by gender and component). The application also provides total inpatient load for DNBI and WIA admissions based on overall prevalence rate per 1,000 Soldiers for the selected operation and troop strength. In addition, the Web tool produces graphical longitudinal displays of admissions and admission rates; deployed force profiles; inpatient load rates; injury distribution based on The Barell Injury Diagnosis Matrix, Classification by Body Region and Nature of the Injury; and admission profiles presenting the top 100 International Classification of Diseases, Ninth Revision, Clinical

Modification (ICD-9-CM) diagnosis codes (all stratified by operation, component, unit type, gender, and age group).

CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR CASUALTY ESTIMATOR

4-44. The medical planner's estimates (such as casualty, logistic, evacuation, and personnel cross leveling) must be modified for the CBRN environment. Estimates of CBRN medical workloads can be found in NATO Allied Medical Publication-8(C) and its supplement publication—Institute for Defense Analyses, Technical Reference Manual: NATO Planning Guide for the Estimation of CBRN Casualties, Allied Medical Publication-8(C). A number of new decision support tools under development have various levels of capability to estimate the number and types of casualties from CBRN events. Data from these models can be used to develop medical estimates.

BASE CAMP PLANNING

4-45. The medical planner generally requires the assistance of a health facility planner to plan the physical and material requirements to develop a suitable plan for an MTF at a base camp. The medical planner can assist in the development of the base camp health facility plan by providing requirements and capabilities to the responsible command. The services provided will depend on the size of the base camp and the anticipated requirements. The medical requirements may include up to a CSH, or it may include a smaller organic medical clinic or aid station for personnel assigned to provide minimal Role 1 care.

4-46. The type of MTF (including medical, dental, and veterinary services) on a base camp will vary based on specific requirements that are directly related to the mission, task organization, and allocation for medical units assigned to a particular AO. The United States Army Health Facility Planning Agency provides health facility planning expertise in support of deployed units. The United States Army Health Facility Planning Agency serves as the health facility planning link from the strategic to the tactical level and provides reachback technical assistance to the forward deployed health facility planners located in theater. The health facility planner will likely be assigned to the staff of joint forces or Service component surgeon serving in a collaborative fashion with the following: theater level engineering section, base sustainment operations, reachback agency support, contracting agencies, subordinate command-level facility management personnel, funding streams, and host-nation entities.

4-47. The health facility planner relies on a successful and coordinated working relationship with the EAB engineering staff. The health facility planner provides direct advice and input to the EAB engineering staff with regard to all health facility planning above the brigade battalion aid station level to ensure appropriate alignment with the theater medical concept of operations. Refer to FM 4-02.1 for additional information on the facility planning and requirements and ATP 3-37.10/MCRP 3-17.7N and Engineer Pamphlet (EP) 1105-3-1 for information on base camp planning and development.

MEDICAL INTELLIGENCE

4-48. Medical intelligence is provided to the medical planner by intelligence organizations. The medical planner must identify the intelligence requirements and provide that request to the supporting intelligence element with the command. In an emergency, up-to-date medical intelligence assessments can be obtained by contacting Director, Defense Intelligence Agency, Attention: Director, National Center for Medical Intelligence, Fort Detrick, Maryland 21702-5000. The National Center for Medical Intelligence can provide health service assessments, medical intelligence notes, medical intelligence imagery briefs, and foreign medical facility assessments. The medical planner should use all available intelligence elements to obtain needed intelligence to support the military operation. The National Center for Medical Intelligence 24-hour service/request for information telephone number is commercial telephone (301) 619-7574 or Defense Switch Network 343-7574.

4-49. An additional source of information on deployment occupational and environmental health surveillance is the United States Army Public Health Command. Information can be requested from the United States Army Public Health Command through their Web site.

4-50. A supporting intelligence element should exist at some point in the AHS unit's chain of command. This element will be the primary source for the medical planner to access the necessary intelligence for the execution for the AHS support operations.

Appendix A

Army Health System Estimates

Each medical function is an integral part of providing a seamless health care delivery system from the point of injury or wounding through successive roles of care. A separate AHS estimate could be developed for each medical function as it pertains to the mission or as required. Depending upon what level of command the AHS estimate is prepared for will determine whether it is written out in detail, overlays developed, or it is provided verbally. Regardless of the mode of dissemination, the same planning consideration should be used.

Sample planning considerations (*italicized*) are provided for the various parts of the estimate. They are not an inclusive listing of considerations nor may they be an appropriate consideration given the specific mission, and are included only to provide an example and to provoke thought.

A-1. Figure A-1 is a sample format for an AHS support estimate. While this example is in the basic format of an OPORD or OPLAN, estimates can be in any format that is approved by the commander.

[CLASSIFICATION]	
Place the classification at the top and bottom of every page of the estimate. Place the classification marking at the front of each paragraph and subparagraph in parentheses. Refer to Army regulation (AR) 380-5 for classification and release marking instructions.	
<div>Copy ## of ## copies Issuing headquarters Place of issue Date-time group of signature Message reference number</div>	
ARMY HEALTH SYSTEM SUPPORT ESTIMATE	
(U) References: <i>List documents essential to understanding the AHS estimated in support of the OPLAN or OPORD. List references concerning a specific function in the appropriate attachments.</i>	
(a) List maps and charts first. <i>Map entries include series number, country, sheet names, or numbers, edition, and scale.</i>	
(b) List other references in subparagraphs.	
1. (U) Mission: <i>Statement of the overall AHS mission and type of activity to be supported (such as unified land operations, stability tasks, or urban operations).</i>	
2. (U) Situation and Considerations. <i>This paragraph describes the conditions of the operational environment and how they may impact on AHS operations. Possible situations and considerations may include—</i>	
[page number]	
[CLASSIFICATION]	

Figure A-1. Sample format for an Army Health System support estimate

[CLASSIFICATION]

- a. (U) Characteristics of the AO. *Include geographical barriers and political borders.*
- b. (U) Area of Interest. *Describes the area of interest. Refer to Annex B (Intelligence) as required.*
- c. (U) Area of Operations. *In the following subparagraphs describe the characteristics of the AO and how it will affect the AHS functions. Refer to the appropriate annex for supplemental data. Example "Refer to Annex B (Intelligence) as required."*
- (1) (U) Terrain. *The terrain directly impacts the planning and execution of AHS support operations. The more difficult the terrain, the more adverse an impact it has on delivery of health care in the AO. Natural barriers influence the type of medical evacuation which will be conducted such as litter versus ground ambulance as occurs on mountainous terrain or in jungles. The FHP requirements for the conduct of urban operations vary significantly from the requirements for the deployment of armor operations on open terrain. The medical planner must carefully analyze the impact of the terrain, both natural and man-made, on the establishment of MTFs, the placement of casualty collection points and ambulance exchange points, and the potential for impeding air and ground ambulance operations, such as the potential limitation in the use of air ambulances in mountain operations.*
- (2) (U) Weather and climate. *This includes seasonal weather and potential for hurricanes/typhoons, tornadoes, or monsoons (for examples, conditions which may further isolate villages and sections of the population due to flooding), or its adverse effect on a disaster relief mission, or any other significant role it may play on an operation being planned. Heat and cold injuries incurred by forces not acclimatized can severely impact the health of the command during initial deployment phases.*
- (3) (U) Dislocated civilian population and EPWs.
- (4) (U) Environmental health threats. *Local and regional industries, pest management practices, solid and hazardous waste practices, and other activities can create a significant health risk to deploying forces, such as exposure to toxic industrial material. Much of this information may be available prior to deployment through medical intelligence reports, industrial baselines assessment, environmental health databases and assessments; and records of previous operations in the AO.*
- (5) (U) Flora and fauna. *Personnel must be familiar with the poisonous and toxic plants in the AO. This includes plants which are poisonous if ingested and those that will present dermatologic symptoms. Snakes and other reptiles which are poisonous; wild animals, if they pose a threat to humans; and arthropods (mosquitoes, flies, and ticks). The medical planner must ensure that the health threat has been identified and countermeasures are included in the preventive medicine capabilities such as pest management activities, mosquito netting, insect repellents, chemoprophylaxis, immunizations, and barrier creams.*
- (6) (U) Disease. *The endemic and epidemic diseases in the AO must be identified. Additionally, if a multinational force is deployed, endemic native to the parent country should also be identified and preventive medicine measures planned if appropriate.*
- (7) (U) Local resources.
- (8) (U) Nuclear, biological, chemical and high explosive weapons.
- d. (U) Enemy Forces. *Identify enemy forces and appraise their general capabilities. Describe the enemy's composition, disposition, location, strength, and probable COA. Identify adversaries and know the potential*

[page number]

[CLASSIFICATION]

Figure A-1. Sample format for an Army Health System support estimate (continued)

[CLASSIFICATION]

terrorist threats within the AO. List the enemy capabilities that could influence the AHS and HSS mission. Refer to Annex B (Intelligence) as required.

e. (U) Friendly Forces. *Briefly identify the missions of friendly forces and the objectives, goals, and missions of civilian organizations that impact the AHS mission and the HSS functions in the following subparagraphs.*

(1) (U) Higher Headquarters Mission and Intent. *Identify and state the mission and commander's intent for headquarters two levels up and one level up from the issuing headquarters.*

(a) (U) Higher Headquarters Two Levels Up. *Identify the higher headquarters two echelons above.*

1. (U) Mission.

2. (U) Commander's Intent.

(b) (U) Higher Headquarters. *Identify the higher headquarters one echelon above.*

1. (U) Mission.

2. (U) Commander's Intent.

(2) (U) Missions of Adjacent Units. *Identify and state the mission of adjacent units and other units whose action have a significant impact on the issuing headquarters.*

(3) (U) United States Uniformed Services to be supported.

(a) (U) Army.

(b) (U) Navy.

(c) (U) Air Force.

(d) (U) Marines.

(e) (U) Coast Guard.

(4) (U) Department of Defense Civilians.

(5) (U) United States national contract personnel.

(6) (U) Multinational forces.

(7) (U) Enemy prisoners of war.

(8) (U) Indigenous civilians and third country civilians. *Refer to discussion of Articles 15 and 16 of the Geneva Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field in FM 27-10.*

(9) (U) Others. *This can include retained personnel; dislocated civilians from areas experiencing violent confrontations or oppression; dislocated civilians from other countries; and members of the nongovernmental organizations and international organization deemed eligible for support.*

[page number]

[CLASSIFICATION]

Figure A-1. Sample format for an Army Health System support estimate (continued)

[CLASSIFICATION]

f. (U) Interagency, Intergovernmental, and Nongovernmental Organizations. *Identify and state the objective or goal and primary tasks of those non-Department of Defense organizations that have a significant role within the AO. This would include organizations such as the Center for Excellence in Disaster Management and Humanitarian Assistance, United Nations, World Health Organization, International Committee of the Red Cross, Doctors Without Border, and the Pan America Health Organization to name a few. Refer to Annex V (Interagency Coordination) as required.*

g. (U) Civil Considerations. *List all critical civil considerations that would impact HSS operations. For a complete discussion on civil consideration in the planning process refer to ATP 3-57.60. Refer to Appendix I (Intelligence Estimate) to Annex B Intelligence) as required.*

(1) Civilian Population. *The presence of civilians on the mission makes AHS operations more complex. Medical planners need to consider and plan for the potential impact the dislocated civilians, and retained or detained persons will have. Prior to an operation, a determination of eligibility for care in U.S. MTFs should be made. Clear and concise guidance should be disseminated in the order as both U.S. and international law may be applicable to treatment of injured and ill civilians.*

(2) (U) Social Considerations. *This may include the social climate, role of religion, gender considerations, and events (religious periods and traditional vacations) that affect AHS operations.*

(3) (U) Other Civil Considerations. *This could include political, economic, and environmental issues to name a few that may affect AHS operations.*

h. (U) Health of the Command. *The following factors indicate medical measures that the commander should consider prior to each operation being planned.*

(1) (U) Acclimation of Forces. *The acclimation of troops is an important consideration in the initial deployment of forces. They may require acclimation not only to heat and cold, but also for elevation (altitude).*

(2) (U) Presence of Disease. *What endemic diseases are present in the force (in multinational forces, there may be diseases to their native countries for which U.S. forces do not have an immunity)? What are the endemic diseases in the AO? Are there any epidemic diseases present? Are medical surveillance activities being conducted or required? What disease vectors are in the AO? Are preventive medicine programs, such as pest management activities required? Has a baseline of disease presence been determined? A shift from the baseline may indicate enemy CBRN.*

(3) (U) Status of Immunizations and/or Chemoprophylaxis. *Do U.S. forces have all required immunizations to counter the health threat to the force? Has a chemoprophylaxis been prescribed for personnel within the AO? What is the immunization status of the multinational forces, host-nation forces, civilian population?*

(4) (U) Status of Nutrition. *Does the Class I and ration cycle for the operation's feeding cycle meet the nutritional needs and requirements for the operation and the AO. Has the medical supplement for patients been ordered or will it be part of the unit basic load? If pertinent, the nutrition status of multinational forces and/or civilian population may also be addressed.*

(5) (U) Clothing and Equipment. *Consideration for special clothing and equipment necessary to operate in a particular climate or a particular type of terrain should be included. Examples of clothing and equipment requirements are insect netting, cold-weather clothing, and permethrin treated uniforms.*

[page number]

[CLASSIFICATION]

Figure A-1. Sample format for an Army Health System support estimate (continued)

[CLASSIFICATION]

(6) (U) Fatigue. *The fatigue factor must be monitored, as fatigue can contribute to lowering the resistance to diseases, stress reductions, and faulty decisionmaking. Leaders must ensure sleep plans are developed and enforced.*

(7) (U) Morale. *This is an important aspect as a measure of combat effectiveness. Soldiers who have strong esprit de corps and unit cohesiveness are more likely to be successful in battle. Additionally, the provision of effective and timely AHS to deployed forces increases morale, as a Soldier knows that if they are wounded they will be evacuated and cared for.*

(8) (U) Status of Training. *Depending on the command this can include the training status of medical providers and/or individual Soldiers on medical tasks. In addition to Soldier competency in basic Soldier skills and specific military occupational specialty or areas of concentration related tasks, training may include tactics, techniques, and procedures for a specific type operation (such as urban or mountain operations), increased numbers of combat lifesavers per unit, or orientation to the AO (language, culture, customs, ethics, religious, and other consideration for conducting operations).*

(9) (U) Other. *List other items of significance that will impact on the AHS support mission during this particular operation.*

i. (U) Assumptions. *List assumptions used in development. Assumptions may be required as a basis for initiation, planning, or preparing the estimate. Assumptions are modified as factual data becomes available or when specific guidance becomes available.*

j. (U) Special Factors. *Mention items of special importance in the particular operation to be supported such as the unique condition to be encountered in CBRN warfare, or the impact that patients suffering from combat and operational stress will have on the AHS system.*

3. (U) Army Health System Support Analysis.

a. (U) Patient Estimates. *Include rates and number by type unit and division.*

(1) (U) Number of Patients Anticipated.

(2) (U) Distribution within the AO (space).

(3) (U) Distribution in time during the Operation (evacuation time).

(4) (U) Areas of Patient Density.

(5) (U) Possible Mass Casualties.

(6) (U) Lines of Patient Drift and Evacuation.

b. (U) Support Requirements. *Consider separately the estimate support requirements for–*

(1) (U) Patient Evacuation and Medical Regulation.

(2) (U) Hospitalization.

(3) (U) Health Logistics, to include Blood Management.

[page number]

[CLASSIFICATION]

Figure A-1. Sample format for an Army Health System support estimate (continued)

[CLASSIFICATION]
(4) (U) <u>Medical Laboratory Services.</u>
(5) (U) <u>Dental Services.</u>
(6) (U) <u>Veterinary Services.</u>
(7) (U) <u>Preventive Medicine Services.</u>
(8) (U) <u>Combat and Operational Stress Control Services.</u>
(9) (U) <u>Area Medical Support.</u>
(10) (U) <u>Mission command.</u>
(11) (U) <u>Others, as appropriate.</u>
c. (U) <u>Resources Available.</u>
(1) (U) <u>Other Service support.</u>
(2) (U) <u>Organic medical units and personnel.</u>
(3) (U) <u>Attached medical units and personnel.</u>
(4) (U) <u>Supporting medical units.</u>
(5) (U) <u>Civil public health capabilities and resources.</u> <i>Civil Affairs personnel are responsible for obtaining host-nation support.</i>
(6) (U) <u>Enemy prisoner of war medical personnel.</u>
(7) (U) <u>Health service logistics.</u>
(8) (U) <u>Medical troop ceiling.</u>
4. (U) <u>Courses of Action.</u> <i>Using the military decisionmaking process and the above considerations and analysis, determine and list all logical COAs which will support the commander's OPLAN and accomplish the AHS mission. Consider all standard operating procedures, policies, and procedures in effect. Refer to ADRP 5-0 and FM 6-0 for detailed information on the military decisionmaking process and the COA development.</i>
a. (U) <u>Course of action development.</u> <i>A COA is a broad potential solution to an identified problem. The COA development step generates options for follow-on analysis and comparison that satisfy the commander's intent and planning guidance. During the COA development, planners use the problem statement, mission statement, commander's intent, planning guidance, and the various knowledge products developed during mission analysis to develop COAs.</i>
b. (U) <u>Course of action analysis (war game).</u> <i>Course of action analysis is one of the most important steps of the military decisionmaking process. Course of action analysis (war-gaming) is a disciplined process, with rules and steps that attempt to visualize the flow of the operation given the force's strengths and dispositions, enemy's capabilities and possible COAs, impact and requirements of civilians in the AO, and other aspects of the situation.</i>
[page number]
[CLASSIFICATION]

Figure A-1. Sample format for an Army Health System support estimate (continued)

<p style="text-align: center;">[CLASSIFICATION]</p> <p>b. (U) <u>Course of action analysis (war game).</u> <i>Course of action analysis is one of the most important steps of the military decisionmaking process. Course of action analysis (war-gaming) is a disciplined process, with rules and steps that attempt to visualize the flow of the operation given the force's strengths and dispositions, enemy's capabilities and possible COAs, impact and requirements of civilians in the AO, and other aspects of the situation.</i></p> <p>c. (U) <u>Course of action comparison.</u> <i>Course of action comparison is an objective process to evaluate COAs independently of each other and against set evaluation criteria approved by the command and staff. The goal to identify the strengths and weaknesses of COAs enables selecting a COA with the highest probability of success and further developing it in an operations plan or OPORD.</i></p> <p>5. (U) <u>Conclusions.</u></p> <p>a. (U) <i>Indicate whether the mission set forth in paragraph 1 can or cannot be supported. Provide a supporting statement if the AHS support mission cannot be accomplished.</i></p> <p>b. (U) <i>Indicate which AHS COA can best support the mission.</i></p> <p>c. (U) <i>List the limitations and deficiencies in the preferred COA that must be brought to the commander's attention.</i></p> <p>d. (U) <i>List factors adversely affecting the health of the command.</i></p> <p>OFFICIAL:</p> <p>(Authenticator's name)</p> <p>(Authenticator's position)</p> <p style="text-align: center;">[page number]</p> <p style="text-align: center;">[CLASSIFICATION]</p>
--

Figure A-1. Sample format for an Army Health System support estimate (continued)

This page intentionally left blank.

Appendix B

Patient Rate Computations

Rates are a numerical expression of the relative frequency with which an event occurs. The following rates are commonly used in the health care field to express the occurrence of an event in a population over time.

RATES

B-1. As used in military medicine, the term rate is a numerical expression of the number of times a particular event occurs in a specified population during a given period of time. Types of rates determined are admission rates, mortality rates, incidence rates (specific diseases), prevalence rates, medical noneffective rates, and case fatality rates. Through the use of rates, it is possible to make direct, ready, and meaningful comparisons of events related to different time periods or different populations.

CALCULATING A RATE

B-2. The following formula is used to calculate a rate:

$$\text{Rate} = \frac{f \times (T/t)}{(s/k)} \quad \text{or} \quad \text{Rate} = \frac{f \times T \times k}{t \times s}$$

Where:

f = The observed frequency (such as the number of admissions and deaths).

t = The observed time period.

s = The observed strength or population.

T = The standard time period (per day, per month, per year).

k = The standard unit of population (per 100, per 1,000, per 100,000).

B-3. The value for T must always be expressed in the same unit that is used for the value of t . When it is necessary to be precise in computing an annual rate based upon a particular month's experience, the value of T will be 365 with the observed time period t as the specific number of days in the specific month (30, 31, 28, or 29). When dealing with rates used in military medicine, the most frequently used standard time period T is one year, which gives annual rates as the number per year. For some purposes, such as in planning and patient studies, T is commonly used as one day, and the resultant rate is a daily one, or the number per day.

B-4. The average (or mean) strength s of the time period t in which the frequency of the event occurred should be used where practicable. For military medicine frequency rates, the standard unit of strength or population k is taken as 1,000.

RATES DEFINED

B-5. Rates are a type of frequency measure. In health care, rates are often used to measure an event over time and are sometimes used as performance improvement measures. The basic formula for a rate is as follows:

$$\frac{\text{Number of cases or events occurring during a given time period} \times 10^n}{\text{Number of cases or population at risk during same time period}}$$

or

$$\frac{\text{Total number of times something did happen} \times 10^n}{\text{Total number of times something could happen}}$$

ADMISSION RATE

B-6. Admissions represent a general class of which there are many subclasses. In terms of the reason for admission for medical treatment, the rates may be based only on admissions for—

- Disease (disease admission rate).
- Nonbattle injury.
- The combination of DNBI (all nonbattle causes admission rates).
- Battle injury and wounded.
- A combination of all the foregoing causes (all causes admission rate).

B-7. An admission rate may be computed for the admission due to a particular cause, such as a specific disease.

$$\text{Admission rate} = (f/s) \times k$$

Where:

f = Persons admitted to the medical facility during a specified period.

k = The standard population (1,000).

s = Population during the same period of time that the admission occurred.

MORTALITY RATE

B-8. Mortality rate is a measure of the number of deaths, in general or due to a specific cause, in a population. The mortality (death) rate may differ from the admission rate only in that the event which it measures is the number of deaths, rather than the number of patient admissions. Since the magnitude of the frequencies is less, a large standard unit of population (k) is used (1,000 or 10,000) more frequently than in the case of admission rates. The standard time period will usually be a year.

$$\text{Mortality rate} = (f/s) \times k$$

Where:

f = Deaths occurring during a specified time period.

k = The standard population (1,000).

s = Population during the same time period that the deaths occurred.

INCIDENCE RATE

B-9. The incidence rate measures the number of new diseases diagnosed or reported during a defined period of time, divided by the number of persons in a stated population in which the cases occurred. This is usually expressed as cases per 1,000 or 10,000 yearly.

$$\text{Incidence rate} = (f/s) \times k$$

Where:

f = New cases occurring during a given time period.

k = The standard population (1,000).

s = Population at risk during the same time period.

PREVALENCE RATE

B-10. Prevalence rates measure the total number of persons sick or portraying a certain condition in a stated population at a particular time (point prevalence) or during a stated period of time (period prevalence), regardless of when that illness or condition began, divided by the population at risk of having the disease or condition, at the point in time or midway through the period in which they occur. A case is counted in prevalence until death or recovery. The following formula is used in calculating the prevalence rate per 1,000:

$$\text{Prevalence rate} = (f/s) \times k$$

Where:

f = The number of cases of the given condition during a specified time period.

k = The standard population (1,000).

s = Population during the same time period that the cases occurred.

MEDICAL NONEFFECTIVE

B-11. The medical noneffective rate is a measure frequently used in military medicine. It is a special case of the prevalence rate mentioned above. This rate measures the prevalence of noneffectiveness with noneffectiveness being defined as excused from duty for medical reasons. This rate does not generally include time off for clinic visits and days off, other than hospitalization, for illness.

B-12. The noneffective rate may be computed for the patients excused from duty for all causes, or it may be computed for particular groups such as all cases excused from duty due to disease (disease noneffective rate).

B-13. The noneffective rate may be computed by using the same formula as shown for computing the prevalence rate but where f stands for the number of people noneffective in the particular group being studied.

B-14. An alternate method is based on the number of noneffectives on the average day during a particular period rather than on a count of the number of noneffectives as of one particular day.

B-15. When the number of days lost in the period is used rather than the number of patients on the average day of the period, the following formula will be used:

$$\text{Noneffective rate} = \frac{\text{days lost rate} \times 1,000}{\text{days in the period} \times \text{average strength}}$$

B-16. The following relationship is another method to determine the noneffective rate:

$$\text{Noneffective rate} = (\text{daily admission rate}) \times (\text{average days per patient})$$

CASE FATALITY RATE

B-17. Case fatality rate or case fatality ratio, is the proportion of persons with a particular condition (cases) who die from that condition. It is a measure of the severity of the condition. The formula is as follows:

$$\text{Case fatality rate} = (f/c) \times k$$

Where:

c = The overall number of cases being studied during a specific time period.

f = The number of cases that resulted in death during the same specified time period.

k = The standard population (100).

B-18. An example would be to find the case fatality rate for an outbreak of food poisoning where 3 people died out of 555 cases reported.

$$\text{Case fatality rate} = (3 / 555) \times 100 = 0.5\%$$

This page intentionally left blank.

Appendix C

Army Health System Operations Order

This appendix provides an example and guidance on the preparation of an AHS appendix to an OPORD or OPLAN. Discussion of specific planning consideration is included with the sample formats. These discussions are not all inclusive, but are provided as a thought-provoking example to expand on. Actual considerations are dependent upon mission, enemy, terrain and weather, troops and support available, time available, and civil considerations (mission variables).

SECTION I — EXAMPLE OF AN OPERATION ORDER FORMAT

C-1. Figure C-1 provides an example of Appendix 3, Army Health Support of Annex F, Sustainment. This example is not all inclusive and other subparagraphs may be added as necessary. Refer to FM 6-0 for further information on developing annexes and appendixes for plans and orders.

[CLASSIFICATION]
<i>Place the classification at the top and bottom of every page of the annex. Place the classification marking at the front of each paragraph and subparagraph in parentheses. Refer to AR 380-5 for classification and release marking instructions.</i>
Copy ## of ## copies Issuing headquarters Place of issue Date-time group of signature Message reference number
APPENDIX 3 (ARMY HEALTH SUPPORT) TO ANNEX F (SUSTAINMENT) OF OPERATION PLAN/ORDER [number] [(code name)] — [issuing headquarters] [(classification of title)]
(U) References: <i>List documents essential to the understanding the Appendix 3 to Annex F. List references concerning a specific function in the appropriate attachments.</i>
a. <i>List maps and charts first. Map entries include series number, country, sheet names, or numbers, edition, and scale.</i>
b. <i>List other references in subparagraphs labeled as shown.</i>
c. <i>Doctrinal references for Army Health Support include:</i>
(1). Geneva Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field, 12 August 1949.
[page number] [CLASSIFICATION]

Figure C-1. Example of an operation order format

[CLASSIFICATION]
<p>(2) Geneva Convention (II) for the Amelioration of the Condition of the Wounded, Sick, and Shipwrecked Members of Armed Forces at Sea, 12 August 1949.</p> <p>(3) Geneva Convention (III) relative to the Treatment of Prisoners of War, 12 August 1949.</p> <p>(4) Geneva Convention (IV) relative to the Protection of Civilian Persons in Time of War, 12 August 1949.</p> <p>(5) Joint Publication 4-02, Health Service Support, 26 July 2012.</p> <p>(6) Field Manual 4-02, Army Health System, 26 August 2013.</p> <p>(U) Time Zone Used Throughout the OPLAN/OPORD: <i>State the time zone used in the AO during execution. When the OPLAN or OPORD applies to units in different time zones, use Greenwich Mean Time (ZULU).</i></p> <p>(U) Task Organization: <i>Describe the organization of forces available to the issuing headquarters and their command and support relationships. Refer to Annex A (Task Organization) if long or complicated.</i></p> <p>1. (U) Situation. <i>The situation paragraph describes the conditions of the operational environment that impact operations in the following subparagraphs:</i></p> <p style="padding-left: 40px;">a. (U) <u>Area of Interest.</u> <i>Describes the area of interest as it relates to AHS support. Refer to Annex B (Intelligence) as required.</i></p> <p style="padding-left: 40px;">b. (U) <u>Area of Operations.</u> <i>In the following subparagraphs describe the characteristics of the AO and how it will affect the AHS functions. Refer to Appendix 2 (Operation Overlay) to Annex C (Operations) as required.</i></p> <p style="padding-left: 80px;">(1) (U) <u>Terrain.</u> <i>Describe the aspects of terrain that impact AHS operations. Refer to Annex B (Intelligence) as required.</i></p> <p style="padding-left: 80px;">(2) (U) <u>Weather.</u> <i>Describe the aspects of weather that impact AHS operations. Refer to Annex B (Intelligence) as required.</i></p> <p style="padding-left: 80px;">(3) (U) <u>Local resources.</u> <i>Provide local resources support information. Refer to Annex P (Host-Nation Support) as required.</i></p> <p style="padding-left: 40px;">c. (U) <u>Enemy Forces.</u> <i>Identify enemy forces and appraise their general capabilities. Describe the enemy's composition, disposition, location, strength, and probable COA. Identify adversaries and known or potential terrorist threats within the AO. List the enemy capabilities that could influence the AHS and HSS mission. Refer to Annex B (Intelligence) as required.</i></p> <p style="padding-left: 40px;">d. (U) <u>Friendly Forces.</u> <i>Briefly identify the missions of friendly forces and the objectives, goals, and missions of civilian organizations that impact the AHS mission in the following subparagraphs.</i></p> <p style="padding-left: 80px;">(1) (U) <u>Higher Headquarters Mission and Intent.</u> <i>Identify and state the mission and commander's intent for headquarters two levels up and one level up from the issuing headquarters.</i></p> <p style="padding-left: 120px;">(a) (U) <u>Higher Headquarters Two Levels Up.</u> <i>Identify the higher headquarters two echelons above.</i></p>
[page number] [CLASSIFICATION]

Figure C-1. Example of an operation order format (continued)

<p style="text-align: center;">[CLASSIFICATION]</p> <p>1. (U) <u>Mission.</u></p> <p>2. (U) <u>Commander's Intent.</u></p> <p>(b) (U) <i>Higher Headquarters. Identify the higher headquarters one echelon above.</i></p> <p>1. (U) <u>Mission.</u></p> <p>2. (U) <u>Commander's Intent.</u></p> <p>(2) (U) <u>Missions of Adjacent Units.</u> <i>Identify and state the mission of adjacent units and other units whose action have a significant impact on the issuing headquarters.</i></p> <p>(3) (U) <u>United States Uniformed Services to be supported.</u></p> <p>(a) (U) <u>Army.</u></p> <p>(b) (U) <u>Navy.</u></p> <p>(c) (U) <u>Air Force.</u></p> <p>(d) (U) <u>Marines.</u></p> <p>(e) (U) <u>Coast Guard.</u></p> <p>(4) (U) <u>Department of Defense Civilians.</u></p> <p>(5) (U) <u>Multinational forces.</u></p> <p>(6) (U) <u>Enemy prisoners of war.</u></p> <p>(7) (U) <u>United States national contract personnel.</u></p> <p>(8) (U) <u>Indigenous civilians and third country civilians.</u> <i>Refer to discussion of Articles 15 and 16 of the Geneva Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field in FM 27-10.</i></p> <p>e. (U) <u>Interagency, Intergovernmental, and Nongovernmental Organizations.</u> <i>Identify and state the objective or goal and primary tasks of those non-DOD organizations that have a significant role within the AO. This would include organizations such as the Center for Excellence in Disaster Management and Humanitarian Assistance, United Nations, World Health Organization, International Committee of the Red Cross, Doctors Without Border, and the Pan America Health Organization to name a few. Refer to Annex V (Interagency Coordination) as required.</i></p> <p>f. (U) <u>Civil Considerations.</u> <i>For a complete discussion on civil consideration in the planning process refer to ATP 3-57.60.</i></p> <p>(1) <u>Civilian Population.</u> <i>The presence of civilians on the mission makes AHS operations more complex. Medical planners need to consider and plan for the potential impact the dislocated civilians, internally dislocated civilians, and retained/detained persons will have. Prior to an operation, a determination of</i></p> <p style="text-align: center;">[page number] [CLASSIFICATION]</p>

Figure C-1. Example of an operation order format (continued)

[CLASSIFICATION]

eligibility for care in U.S. MTFs should be made. Clear and concise guidance should be disseminated in the order as both U.S. and international law may be applicable to treatment of injured and ill civilians.

(2) **Social Considerations.** *This may include the social climate, role of religion, gender considerations, and events (religious periods and traditional vacations) that affect AHS operations.*

(3) **Other Civil Considerations.** *This could include political, economic, and environmental issues to name a few that may affect AHS operations.*

g. (U) **Attachments and Detachments.** *List units attached to or detached from the issuing headquarters. State when each attachment is effective if different from the effective time of the OPLAN or OPORD. Do not repeat information already listed in Annex A (Task Organization).*

h. (U) **Assumptions.** *List any AHS specific assumptions that support appendix development.*

2. (U) Mission. *State the overall AHS support mission. Define the unit's mission, a short description of the who, what (task), when, where, and why (purpose) that clearly indicates the action to be taken and the reason for doing so.*

3. (U) Execution. *Describe how the commander intends to accomplish the mission in terms of the command's intent, an overarching concept of operation, schemes of employment for each warfighting function, assessment, specified tasks to subordinate units, and key coordination instructions in the subparagraphs below.*

a. (U) **Scheme of AHS Support.** *Describe how AHS supports the commander's intent and concept of operations. Establish the priorities of AHS support to units for each phase of the operation. Refer to Annex C (Operations) as require. See FM 6-0 for more details.*

b. (U) **Tasks to Subordinate Units.** *List AHS tasks assigned to specific subordinate units not contained in the base plan or order.*

c. (U) **Resources available.**

(1) (U) **Supplies and Equipment.** *This includes both medical and nonmedical supplies and equipment that may be unique to the support of the operation. This may include a list of equipment and resources needed to support urban operations and stability and defense support to civil authorities tasks.*

(2) (U) **Additional Medical Assets.** *List any available additional medical assets that were not previously listed.*

d. (U) **Coordinating Instructions.** *List only instructions applicable to two or more subordinate units not covered in the base order.*

e. (U) **Interagency, Intergovernmental, and Nongovernmental Organizations.** *Identify and state the objective or goal and primary tasks of those non-DOD organizations that have a significant role within the AO. This would include organizations such as the Center for Excellence in Disaster Management and Humanitarian Assistance, United Nations, World Health Organization, International Committee of the Red Cross, Doctors Without Border, and the Pan America Health Organization to name a few. Refer to Annex V (Interagency Coordination) as required.*

[page number]

[CLASSIFICATION]

Figure C-1. Example of an operation order format (continued)

<p style="text-align: center;">[CLASSIFICATION]</p> <p>f. (U) <u>Civil Considerations.</u> <i>Describe the critical aspects of the civil situation that impact AHS operations, such as cultural or religious sensitivities.</i></p> <p>4. (U) <u>Sustainment.</u> <i>Identify sustainment priorities for AHS support to operations key tasks and specify additional sustainment instructions as necessary.</i></p> <p>a. (U) <u>Material and Services.</u> <i>Refer to standard operating procedures or another annex whenever practical.</i></p> <p>b. (U) <u>General supply.</u> <i>Provide special instructions applicable to medical units.</i></p> <p>c. (U) <u>Classes of Supply.</u> <i>Consider supply levels for all classes of supply, in the event of mission requirements in an austere environment and at extended distances from the full complement of logistics and sustainment resources.</i></p> <p>d. (U) <u>Medical logistics.</u> <i>Provide special procedures applicable to this operation for Class VIII resupply and medical maintenance request and procedures if different from Annex F (Sustainment).</i></p> <p>(1) (U) <u>Distribution.</u> <i>Include the method of distribution and any limitations or restrictions that are applicable. Additionally, if special transportation requirements exist, they should also be noted.</i></p> <p>(2) (U) <u>Medical Logistic Activities.</u> <i>This includes the location of the medical supply activities supporting the AO and the means of communicating requests for resupply.</i></p> <p>e. (U) <u>Salvage of Medical Equipment and Supplies.</u> <i>Provide instructions for the procedures to manage the salvage of medical equipment and supplies.</i></p> <p>f. (U) <u>Captured Enemy Medical Equipment.</u> <i>Provide special instructions for the disposition of captured or recovered enemy medical supplies.</i></p> <p>g. (U) <u>Civilian Medical Supplies.</u> <i>Provide special instructions for the disposition of civilian medical supplies.</i></p> <p>h. (U) <u>Other Medical Supply Matters.</u></p> <p>5. (U) <u>Command and Signal.</u></p> <p>a. (U) <u>Command.</u></p> <p>(1) (U) <u>Location of the Commander and Key Leaders.</u> <i>State the location of the commander and AHS key leaders and command surgeons.</i></p> <p>(2) (U) <u>Succession of Command.</u> <i>State the succession of command if not covered in the base order.</i></p> <p>(3) (U) <u>Liaison Requirements.</u> <i>State the AHS liaison requirements not covered in the base order.</i></p> <p>b. (U) <u>Control.</u></p> <p>(1) (U) <u>Command Posts.</u> <i>Describe the employment of AHS-specific command posts, including the location of each control post and its time of opening and closing.</i></p> <p style="text-align: center;">[page number] [CLASSIFICATION]</p>

Figure C-1. Example of an operation order format (continued)

<p style="text-align: center;">[CLASSIFICATION]</p> <p>(2) (U) <u>Reports.</u> <i>List AHS-specific reports not covered in standard operating procedures. Refer to Annex R (Reports) as required.</i></p> <p>c. (U) <u>Signal.</u> <i>Address any AHS sustainment-specific communication requirements. Refer to Annex H (Signal) as required.</i></p> <p>ACKNOWLEDGE: <i>Include only if annex is distributed separately from the base order.</i></p> <p style="text-align: center;">[Commander or Command Surgeon's last name] [Commander or Command Surgeon's rank]</p> <p><i>The commander or authorized representative signs the original copy of the attachment. If the representative signs the original, add the phrase "For the Commander." The signed copy is the historical copy and remains in the headquarters' files.</i></p> <p>OFFICIAL:</p> <p>[Authenticator's name] [Authenticator's position]</p> <p><i>Use only if the commander does not sign the original attachment. If the commander signs the original, no further authentication is required. If the commander does not sign, the signature of the preparing staff officer requires authentication and only the last name and rank of the commander appear in the signature block.</i></p> <p>TABS: <i>List AHS medical function tabs as they apply.</i></p> <p>Tab A – Medical Mission Command Tab B – Medical Treatment Tab C – Medical Evacuation Tab D – Hospitalization Tab E – Dental Services Tab F – Preventive Medicine Tab G – Combat and Operational Stress Control Tab H – Veterinary Services Tab I – Medical Logistics Tab J – Medical Laboratory Support</p> <p>DISTRIBUTION: <i>Show only if distributed separately from the base order or higher-level attachments.</i></p> <p style="text-align: center;">[page number] [CLASSIFICATION]</p>
--

Figure C-1. Example of an operation order format (continued)

Appendix D

Calculation of Hospital Bed Requirements

Although there are automated systems for determining hospital bed requirements, the use of manual calculation is certainly justified in some circumstances due to mission, enemy, terrain and weather, troops and support available, time available, and civil considerations (mission variables). In addition, every medical planner needs to understand the methodology used. This appendix presents a manual methodology based on historical data (terms and acronyms are retained to enhance operational understanding within the context of the examples given) on the patient flow model for calculating the number of hospital beds required in the theater of operations.

APPLICATION OF METHODOLOGY

D-1. The number of beds required to support a particular force depends on the following:

- The projected daily average number of hospitals admissions.
- The evacuation policy.
- The dispersion factor.

D-2. The projected daily average number of hospital admissions can be determined by applying the applicable anticipated admission rates, based on previous combat experience modified to include new factors applicable to new conditions, to unit strengths.

D-3. As a situation progresses, every echelon of command will gradually build up loss experience that more accurately reflects the current conditions. Even the most complete and accurate figures relating to past operations cannot be relied on as valid for future operations. With experience as a basis, good judgment and sound knowledge are used to develop new tables applicable to current and near future operational conditions.

D-4. Based upon the theater evacuation policy, the number of patients remaining in hospitals at the end of a given period (optimally 30 days) may be determined. This calculation is made by applying an accumulation factor to the average daily admissions to determine how many patients will accumulate during the period of estimate. Tables D-1 and D-2, on pages D-2 and D-3, provide examples of accumulation factors.

Table D-1. Example accumulation and disposition factors—combat zone

<i>Based on the assumption of one admission per day of the specified classification of patients during the first period of estimate (30 days)*</i>									
<i>Current and subsequent periods**</i>	<i>Evacuation policy (days)</i>	<i>Wounded in action</i>				<i>Disease and nonbattle injuries</i>			
		<i>Accumulation***</i>	<i>Return to duty #</i>	<i>Died in hospital ##</i>	<i>Evacuated ###</i>	<i>Accumulation</i>	<i>Return to duty</i>	<i>Died in hospital</i>	<i>Evacuated</i>
1	5	2.0265	0.9736	0.3243	26.6756	1.7676	5.7175	0.037	22.4779
2	5	0	0.1034	0.0177	1.9054	0	0.5825	0.002	1.1831
1	7	3.1063	1.6371	0.356	24.9006	2.7768	8.6334	0.0419	18.5479
2	7	0	0.2524	0.025	2.8284	0	1.2336	0.0031	1.5401
1	10	4.7076	2.4207	0.385	22.4867	4.245	11.9923	0.0463	13.7164
2	10	0	0.5373	0.035	4.1353	0	2.4287	0.0047	1.8116
1	15	6.6306	3.3581	0.4053	19.606	6.1563	14.5346	0.0481	9.261
2	15	0	1.1599	0.0477	5.423	0	4.0714	0.0059	2.079
1	5	2.0265	0.9736	0.3243	26.6756	1.7676	5.7175	0.037	22.4779
2	10	0	0.2288	0.0229	1.7748	0	0.9886	0.0026	0.7764
1	7	3.1063	1.6371	0.356	24.9006	2.7768	8.6334	0.0419	18.5479
2	15	0	0.5210	0.0323	2.5530	0	1.9036	0.0038	0.8694
1	10	4.7076	2.4207	0.385	22.4867	4.245	11.9923	0.0463	13.7164
2	15	0	0.7796	0.0401	3.8879	0	2.9169	0.0050	1.3230
1	10	4.7076	2.4207	0.385	22.4867	4.245	11.9923	0.0463	13.7164
2	5	0	0.1034	0.0177	1.9054	0	0.5825	0.002	1.1831
1	15	6.6306	3.3581	0.4053	19.606	6.1563	14.5346	0.0481	9.261
2	7	0	0.2529	0.0250	6.3527	0	1.2336	0.0031	4.9196
1	15	6.6306	3.3581	0.4053	19.606	6.1563	14.5346	0.0481	9.261
2	10	0	0.5393	0.0350	6.0583	0	2.3287	0.0047	3.7229
Legend: * Derived from the complete hospitalization and evacuation experience of all United States Army wounded in action and disease and nonbattle injuries patients admitted to hospitals in the Korean Conflict and all United States Army disease and nonbattle injuries cases admitted to any overseas hospitals during the same period. ** Thirty days each. *** Accumulation of patients at end of period. # Return to duty dispositions during the period. ## Died in hospital dispositions during the period. ### Patient evacuation dispositions out of the combat zone during the period.									

Table D-2. Example accumulation and disposition factors—theater

<i>Based on the assumption of one admission per day of the specified classification of patients during the first period of estimate (30 days)*</i>									
<i>Current and sub-sequent periods**</i>	<i>Evacuation policy (days)</i>	<i>Wounded in action</i>				<i>Disease and nonbattle injuries</i>			
		<i>Accumulation ***</i>	<i>Return to duty #</i>	<i>Died in hospital ##</i>	<i>Evacuated ###</i>	<i>Accumulation</i>	<i>Return to duty</i>	<i>Died in hospital</i>	<i>Evacuated</i>
1	15	9.5249	3.3581	0.4053	16.7117	7.4828	14.5346	0.0481	7.9345
2	15	0	1.1599	0.0477	8.3173	0	4.0714	0.0059	3.4055
1	30	15.0607	4.6585	0.4146	9.8662	10.8494	16.1905	0.0493	2.9108
2	30	0	4.5875	0.0684	10.4048	0	7.6175	0.0077	3.2242
1	15	9.5249	3.3581	0.4053	16.7117	7.4828	14.5346	0.0481	7.9345
2	30	0	2.731	0.0377	6.7362	0	5.6336	0.0088	1.8424
1	30	15.0607	4.6585	0.4146	9.8662	10.8494	16.1905	0.0493	2.9108
2	15	0	1.1599	0.0477	8.3173	0	4.0714	0.0059	3.4055

Legend:

- * Derived from the complete hospitalization and evacuation experience of all United States. Army wounded in action and disease and nonbattle injuries patients admitted to hospitals in the Korean Conflict and all United States Army disease and nonbattle injuries cases admitted to any overseas hospitals during the same period.
- ** Thirty days each.
- *** Accumulation of patients at end of period.
- # Return to duty dispositions during the period.
- ## Died in hospital dispositions during the period.
- ### Patient evacuation dispositions out of the combat zone during the period.

D-5. To meet the requirements of a dynamic and fluid AO, the hospitalization system must maintain certain flexibility. This flexibility is accomplished by moving hospitals to locations of expected high patient density. The percentage of all hospital beds required to remain empty to ensure flexibility is expressed as a dispersion allowance. This allowance is converted to a dispersion factor. It is then applied to the number of patients remaining at a particular level of hospitalization to allow for the dispersion of hospital beds. Dispersion allowance and dispersion factor are further discussed in paragraph D-6.

DISPERSION ALLOWANCE

D-6. This is the percentage of all hospital beds at a level of hospitalization that are required to remain empty to allow for necessary patient dispersion and hospital flexibility. Certain flexibility is needed to initiate hospital relocation using this uncommitted bed capacity or to absorb the sudden influx of patients generated by a mass casualty situation, refer to Table D-3 on page D-4 for dispersion factor. Additionally, separation of patients for reasons of contagious disease, gender, type of treatment (medical surgical), and psychiatric problems, among others, creates a certain number of empty beds within the various wards of a hospital. Providing care for EPWs under the Geneva Convention requires additional hospital units.

DISPERSION FACTOR

D-7. This is a factor used in computing bed requirements. It is a mathematical derivation of the dispersion allowance. A dispersion factor equals 100 percent / (100 percent minus the dispersion allowance) $1.00 / (1.00 - DA) = DF$. Where:

DA = dispersion allowance.

DF = dispersion factor.

D-8. In the past, several dispersion allowances and factors have been used to calculate requirements for different scenarios and locations. These different variables are now reduced to a single dispersion allowance and factor to coincide with the ones used in the Total Army Analysis that predicts future needs and requirements. Refer to Table D-3 for current dispersion allowance and dispersion factor numbers and conversion.

Table D-3. Dispersion allowance and factor conversion table

<i>Dispersion allowance (percent)</i>	<i>Dispersion factor</i>
20	1.25

D-9. A similar methodology may be used to calculate patient dispositions. To determine patient dispositions, disposition factors are substituted for accumulation factors. Multiplication by a dispersion factor is omitted from this procedure. Refer to Tables D-1 and D-2 on pages D-2 and D-3 for example disposition factors.

D-10. The below paragraphs describe in detail the methodology for determining bed requirements for the theater and illustrates how the theater evacuation policy affects the CONUS bed requirements.

D-11. The following is an explanation of terms used in the manual methodology:

- Levels of hospitalization. For the methodology here, the levels of hospitalization include Role 3 and the CONUS Role 4. All theater hospitalization combined with the CONUS, constitute the total (worldwide) hospitalization system.
- Periods of estimate. These are consecutive periods (intervals) of time (in days), usually measured from the beginning of a military operation. Normally, the time period length for manual calculation is 30 days. Bed requirements are normally calculated at the end of each time period.
- Hospital admission. This is the initial entry of an individual as an inpatient into a hospital for a single episode of illness or injury anywhere in the theater. If the same inpatient is discharged from a hospital and later readmitted for a different illness or injury or for a recurrence of the same illness or injury, the individual is counted as another separate admission.
- Patient admission rate. This is the average daily number of admissions per 1,000 average daily strength for a specified portion of the population served and specified period(s). Tables D-4a through D-4i (on pages D-5 through D-10) shows the separate admission rates for WIA patient and DNBI patients for different conflicts and environment conditions.
- Accumulation factor. Assuming a constant admission of one patient per day during a specific period of estimate (and none thereafter), this factor is the expected number of patients remaining (occupying beds) at a particular level of hospitalization at the end of each consecutive period.
- Intermediate of final disposition. An intermediate disposition is a patient evacuation to the next role of hospitalization (or in some cases, another hospital at the same Role of care). Final dispositions are return to duty, died in hospital, and at Role 4 only, disability discharge.
- Disposition factor. Assuming a constant admission of one patient per day during a specific period of estimate (and none thereafter), the disposition factor is the expected number of patients receiving a particular type disposition from a particular level of hospitalization during each consecutive period. Types of disposition include returned to duty, died in hospital, evacuated, or disability discharge (CONUS only).
- Dispersion allowance. See paragraph D-6.
- Dispersion factor. See paragraph D-7.

D-12. When multiplied by the calculated number of patients remaining, it yields the number of beds required to provide for necessary dispersion. A dispersion allowance of 20 percent calculates a dispersion factor of 1.25 (Table D-3 on page D-4). In determining the dispersion allowance, the medical planner must be continually informed as to both the existing and possible future tactical situations. The normal dispersion allowance/factor (20 percent / 1.25) is based on WWII and the Korean Conflict and may have to be adjusted for any future war. In Vietnam for example, the dispersion factor was 40 percent to support unexpected surges in the casualty flow resulting from hostile actions. Due to increased exposure to deep enemy penetrations and destruction of support areas, MTFs may have to be small and well dispersed. The contingencies will decrease the efficient use of beds and require the application of a greater dispersion allowance or factor for planning purposes. Normally, 80 percent occupancy of available beds is the operational maximum. This, therefore, equates to a 20 percent dispersion allowance.

Table D-4a. Disease and nonbattle injury patient admission rates—Desert Shield/Storm, Bosnia, Kosovo, Operation Iraqi Freedom/Operation New Dawn, Operation Enduring Freedom (admissions per 1,000 strengths per day) as of April 2014

<i>Operations</i>	<i>Entire operations 95% rate</i>	<i>Build-up phase 95% rate</i>	<i>Ground combat phase 95% rate</i>	<i>Postdeployment phase 95% rate</i>
<i>Desert Shield/Storm</i>	0.392	0.404	0.586	0.372
<i>Bosnia</i>	0.517	—	—	—
<i>Kosovo</i>	0.510	—	—	—
<i>Operation Enduring Freedom</i>	0.285	—	—	—
<i>Operation Iraqi Freedom/Operation New Dawn</i>	0.208	0.417	0.287	0.202
Note: <ul style="list-style-type: none"> This chart displays the 95th percentile daily hospital admission rate per 1,000 Soldiers for disease and nonbattle injury casualties. When used with the troop strength for a selected operation and phase of the operation (if applicable), the medical planner can calculate the expected number of daily admissions. These rates are based on actual medical and troop strength data for the selected operations and phases, 95th Percentile – The 95th percentile daily rate is the daily rate that is greater than or equal to 95% of all daily rates during the operation. For up to date information regarding current operations daily hospital rates, visit the Center for Army Medical Department Strategic Studies Web site. 				

Table D-4b. Patient admission rates—Overall in World War II, Korean Conflict, and Vietnam Conflict (admissions per 1,000 strengths per day)

<i>Offensive operations</i>											
<i>Infantry</i>			<i>Mechanized</i>			<i>Armored</i>			<i>Nondivisional</i>		
<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>
WWII-Europe (See Table D-4c)											
3.04	2.61	5.65	2.17	2.04	4.21	1.29	1.44	2.73	0.39	1.33	1.72
WWII-Italy (See Table D-4d)											
1.97	4.15	6.12	2.46	3.12	5.58	2.93	2.06	4.99	0.40	2.01	2.41
WWII-Mideast (See Table D-4e)											
2.29	1.96	4.25	2.30	1.98	4.28	2.29	1.96	4.25	0.40	1.60	2.00
WWII-Central and South Pacific (See Table D-4f)											
1.91	1.17	3.08	1.77	0.81	2.58	1.16	0.63	1.79	0.63	0.76	1.39
WWII-Southwest Pacific (See Table D-4g)											
2.08	5.73	7.81	1.92	4.33	6.25	1.75	2.89	4.64	0.99	4.06	5.05
Korean Conflict (See Table D-4h)											
0.82	1.67	2.49	0.76	1.33	2.09	0.69	0.96	1.65	0.54	2.14	2.68
Vietnam Conflict (See Table D-4i)											
0.42	0.89	1.31	0.39	0.69	1.08	0.35	0.46	0.81	0.14	0.92	1.06
Legend:											
DNBI			disease and nonbattle injury								
WIA			wounded in action								
WWII			World War II								

Table D-4c. Patient admission rates—Europe, World War II
(admissions per 1,000 strengths per day)

<i>Terrain and climate</i>	<i>Infantry</i>			<i>Mechanized</i>			<i>Armored</i>			<i>Nondivisional</i>		
	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>
Offensive operations												
Mountain-cold	9.74	5.81	15.55	6.86	5.08	11.94	3.97	1.32	5.29	0.56	1.27	1.83
Plains-cold	5.31	4.97	10.28	4.37	4.09	8.46	3.41	3.18	6.59	0.38	1.23	1.61
Plains-hot	8.82	3.47	12.29	6.32	3.34	9.66	3.80	3.19	6.99	0.49	1.45	1.94
Defensive operations												
Mountain-cold	7.48	4.16	11.64	5.55	3.50	9.05	3.61	2.80	6.41	2.46	2.80	5.26
Plains-cold	1.79	2.99	4.78	1.54	2.41	3.95	1.28	1.79	3.07	0.20	1.44	1.64
Plains-hot	4.58	2.20	6.78	3.06	2.05	5.11	1.52	1.87	3.39	0.12	0.64	0.76
Reserve operations												
Mountain-cold	0.30	2.00	2.30	0.28	1.56	1.84	0.25	1.09	1.34	0.13	1.29	1.42
Plains-cold	0.86	2.95	3.81	0.79	2.25	3.04	0.70	1.52	2.22	0.28	1.87	2.15
Plains-hot	1.74	2.16	3.90	1.46	1.69	3.15	1.17	1.20	2.37	0.57	1.37	1.94
Pursuit operations												
Mountain-cold	3.62	3.74	7.36	3.57	2.76	6.33	3.50	1.75	5.25	1.19	2.52	3.71
Plains-cold	2.71	2.27	4.98	2.46	1.85	4.31	2.19	1.69	3.88	0.89	1.47	2.36
Plains-hot	1.47	1.17	2.64	2.28	1.12	3.40	3.08	1.04	4.12	0.48	0.78	1.26
Inactive operations												
Plains-cold	0.16	1.47	1.63	0.09	1.15	1.24	0.01	0.79	0.80	0.05	0.95	1.00
Plains-hot	0.42	0.75	1.17	0.54	0.65	1.19	0.65	0.52	1.17	0.14	0.50	0.64
Airborne operations												
Plains-cold	10.45	2.99	13.44	0.00	0.00	0.00	0.00	0.00	0.00	3.44	2.13	5.57
Plains-hot	9.20	1.27	10.47	0.00	0.00	0.00	0.00	0.00	0.00	3.03	0.82	3.85
Amphibious operations												
Plains-hot	10.45	0.81	11.26	9.63	0.65	10.28	8.80	0.46	9.26	3.44	0.54	3.98
River-crossing operations												
Mountain-cold	4.84	4.00	8.84	6.58	4.43	11.01	8.31	4.83	13.14	1.59	2.56	4.15
Plains-cold	5.57	3.54	9.11	5.14	2.69	7.83	4.69	1.82	6.51	1.83	2.23	4.06
Plains-hot	5.46	2.83	8.29	3.80	1.70	5.50	2.12	0.54	2.66	1.80	1.80	3.60
Mountain-hot	10.22	6.88	17.10	9.42	5.17	14.59	8.61	3.44	12.05	3.36	4.20	7.56
Legend:												
DNBI disease and nonbattle injury												
WIA wounded in action												
WWII World War II												

Table D-4d. Patient admission rates—Italy, World War II
(admissions per 1,000 strengths per day)

<i>Terrain and climate</i>	<i>Infantry</i>			<i>Mechanized</i>			<i>Armored</i>			<i>Nondivisional</i>		
	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>
Offensive operations												
Mountain-cold	4.68	5.51	10.19	4.32	4.19	8.51	3.94	2.93	6.87	0.07	1.68	1.75
Plains-cold	15.60	5.50	21.10	14.38	4.16	18.54	13.14	2.80	15.94	5.13	3.47	8.60
Plains-hot	12.51	2.89	15.40	11.53	2.24	13.77	10.53	1.56	12.09	0.58	1.71	2.29
Mountain-hot	4.26	4.23	8.49	4.44	3.44	7.88	4.60	2.62	7.22	0.69	1.86	2.55
Defensive operations												
Mountain-cold	0.26	1.74	2.00	0.25	1.33	1.58	0.22	0.89	1.11	0.19	1.99	2.18
Plains-cold	2.18	5.12	7.30	2.02	3.87	5.89	1.84	2.59	4.43	0.72	3.22	3.94
Plains-hot	0.75	3.22	3.97	0.70	2.47	3.17	0.63	1.69	2.32	0.25	2.05	2.30
Reserve operations												
Mountain-hot	0.45	1.97	2.42	0.42	1.53	1.95	0.38	1.06	1.44	0.15	1.27	1.42
Plains-cold	0.19	3.58	3.77	0.18	2.72	2.90	0.16	1.83	1.99	0.06	2.26	2.32
Plains-hot	0.14	4.54	4.68	0.08	3.39	3.47	0.01	2.21	2.22	0.05	2.86	2.91
Pursuit operations												
Mountain-cold	3.61	3.13	6.74	3.33	2.41	5.74	3.04	1.65	4.69	1.19	2.00	3.19
Plains-cold	0.63	1.69	2.32	0.59	1.35	1.94	0.53	0.98	1.51	0.21	1.12	1.33
Plains-hot	1.28	2.00	3.28	1.46	1.62	3.08	1.62	1.22	2.84	0.05	2.86	2.91
Inactive operations												
Plains-cold	0.52	0.72	1.24	0.81	3.55	4.36	1.08	2.36	3.44	0.17	2.95	3.12
Plains-hot	1.15	2.53	3.68	1.07	1.92	2.99	0.97	1.29	2.26	0.38	1.59	1.97
Amphibious operations												
Plains-cold	6.06	1.57	7.63	5.59	1.23	6.82	5.10	0.82	5.92	1.99	1.00	2.99
Plains-hot	16.05	7.66	23.71	14.79	5.85	20.64	13.51	4.00	17.51	5.38	4.88	10.26
River-crossing operations												
Mountain-cold	1.78	4.64	6.42	1.65	3.49	5.14	1.50	2.30	3.80	0.59	2.89	3.48
Plains-cold	2.68	5.10	7.78	2.48	3.87	6.35	2.26	2.61	4.87	0.88	3.23	4.11
Plains-hot	5.64	2.73	8.37	5.20	2.10	7.30	4.75	1.46	6.21	1.86	1.75	3.61
Mountain-hot	1.08	3.21	4.29	1.00	2.42	3.42	0.91	1.61	2.52	0.36	2.10	2.46
Legend:												
DNBI disease and nonbattle injury												
WIA wounded in action												
WWII World War II												

Table D-4e. Patient admission rates—Mideast Wars (between opposing non-U.S. forces)
(admissions per 1,000 strengths per day)

<i>Terrain and climate</i>	<i>Infantry</i>			<i>Mechanized</i>			<i>Armored</i>			<i>Nondivisional</i>		
	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>
All operations												
Desert-hot	2.29	1.96	4.25	2.30	1.98	4.28	2.29	1.96	4.25	0.40	1.60	2.00
Legend:												
DNBI disease and nonbattle injury												
WIA wounded in action												

Table D-4f. Patient admission rates—Central and South Pacific, World War II
(admissions per 1,000 strengths per day)

<i>Terrain and climate</i>	<i>Infantry</i>			<i>Mechanized</i>			<i>Armored</i>			<i>Nondivisional</i>		
	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>
Offensive operations												
Mountain-hot	2.29	1.96	4.25							3.00	1.69	4.69
Offensive operations												
Plains-cold	0.45	4.19	4.64							0.15	2.60	2.75
Inactive operations												
Mountain-hot	0.00	0.99	0.99							0.00	0.64	0.64
Plains-cold	0.00	0.40	0.40							0.00	0.25	0.25
Amphibious operations												
Mountain-jungle	4.48	1.19	5.67							1.47	0.79	2.26
Plains-jungle	5.64	1.28	6.92							1.86	0.86	2.72
Plains-hot	12.78	1.21	13.99							4.20	0.80	5.00
Legend: DNBI disease and nonbattle injury WIA wounded in action WWII World War II												

Table D-4g. Patient admission rates—Southwest Pacific, World War II
(admissions per 1,000 strengths per day)

<i>Terrain and climate</i>	<i>Infantry</i>			<i>Mechanized</i>			<i>Armored</i>			<i>Nondivisional</i>		
	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>
Defensive operations												
Mountain-cold	4.13	5.63	9.76							1.36	3.51	4.87
Mountain-hot	2.68	5.13	7.81							0.78	4.38	5.16
Plains-hot	3.65	4.63	8.28							1.20	2.90	4.10
Mountain-jungle	1.61	4.26	5.87							0.53	2.68	3.21
Plains-jungle	4.16	4.34	8.50							1.37	2.93	4.30
Offensive operations												
Plains-cold	0.00	6.01	6.01							0.00	3.76	3.76
Airborne operations												
Mountain-hot	17.75	3.11	20.86							5.84	1.89	7.73
Inactive operations												
Plains-cold	0.00	6.14	6.14							0.00	3.86	3.86
Legend: DNBI disease and nonbattle injury WIA wounded in action WWII World War II												

Table D-4h. Patient admission rates—Korean Conflict
(admissions per 1,000 strength per day)

<i>Terrain and climate</i>	<i>Infantry</i>			<i>Mechanized</i>			<i>Armored</i>			<i>Nondivisional</i>		
	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>
Offensive operations												
Mountain-cold	3.54	3.07	6.61	3.27	2.46	5.73	2.98	1.87	4.85	0.19	1.82	2.01
Plains-cold	1.46	3.49	4.95	1.35	2.77	4.12	1.23	2.02	3.25	0.48	2.31	2.79
Mountain-hot	2.42	2.33	4.75	2.24	4.83	7.07	2.04	1.30	3.34	0.07	1.31	1.38
Defensive operations												
Mountain-cold	4.75	4.86	9.61	4.38	4.06	8.44	4.00	3.23	7.23	0.43	2.03	2.46
Plains-cold	0.70	4.72	5.42	0.65	3.93	4.58	0.59	3.11	3.70	0.23	3.32	3.55
Plains-hot	8.03	3.21	11.24	7.40	2.48	9.88	6.76	1.71	8.47	2.64	2.06	4.70
Mountain-hot	2.99	3.14	6.13	2.76	2.44	5.20	2.52	1.72	4.24	1.47	3.09	4.56
Reserve operations												
Mountain-hot	0.05	1.74	1.79	0.05	1.37	1.42	0.04	0.97	1.01	0.02	1.13	1.15
Plains-cold	0.29	2.51	2.80	0.27	2.01	2.28	0.24	1.49	1.73	0.10	1.68	1.78
Plains-hot	0.04	1.32	1.36	0.04	1.04	1.08	0.03	0.73	0.76	0.01	0.86	0.87
Mountain-hot	0.07	1.37	1.44	0.07	1.09	1.16	0.06	0.77	0.83	0.02	0.89	0.91
Pursuit operations												
Mountain-cold	0.64	3.18	3.82	0.60	2.61	3.21	0.54	2.00	2.54	0.21	2.19	2.40
Plains-cold	0.39	2.12	2.51	0.27	1.50	1.77	0.13	0.86	0.99	0.00	0.00	0.00
Mountain-hot	1.40	1.84	3.24	1.30	1.43	2.73	1.18	1.01	2.19	0.60	1.72	2.32
Inactive operations												
Mountain-cold	0.15	1.49	1.64	0.15	1.19	1.34	0.13	0.86	0.99	0.01	1.52	1.53
Plains-cold	0.07	0.69	0.76	0.07	0.56	0.63	0.06	0.39	0.45	0.02	0.45	0.47
Plains-hot	0.14	0.50	0.64	0.14	0.40	0.54	0.12	0.28	0.40	0.05	0.33	0.38
Mountain-hot	0.14	0.78	0.92	0.14	0.63	0.77	0.12	0.44	0.56	0.05	0.41	0.46
Amphibious operations												
Plains-hot	1.83	0.44	2.27	1.69	0.36	2.05	1.54	0.25	1.79	0.60	0.29	0.89
River-crossing operations												
Mountain-cold	6.94	3.99	10.93	6.40	3.14	9.54	5.84	2.26	8.10	2.28	1.62	3.90
Plains-cold	7.20	2.41	9.61	6.64	1.95	8.59	6.06	1.46	7.52	2.37	1.63	4.00
Plains-hot	3.32	2.01	5.33	3.07	1.57	4.64	2.80	1.10	3.90	1.09	1.31	2.40
Legend:												
DNBI disease and nonbattle injury												
WIA wounded in action												
WWII World War II												

Table D-4i. Patient admission rates—Vietnam Conflict
(admissions per 1,000 strength per day)

<i>Terrain and climate</i>	<i>Infantry</i>			<i>Mechanized</i>			<i>Armored</i>			<i>Nondivisional</i>		
	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>	<i>WIA</i>	<i>DNBI</i>	<i>Total</i>
All operations												
Jungle-mountain-hot	0.42	0.89	1.31	0.39	0.69	1.08	0.35	0.46	0.81	0.14	0.92	1.06
Legend:												
DNBI disease and nonbattle injury												
WIA wounded in action												
WWII World War II												

EXAMPLE PROBLEM

D-13. Table D-5 on page D-12 shows the problem statement for the data needed prior to and during the example application of this methodology.

D-14. Additional information includes—

- The given force for this problem is comprised of a corps consisting of three divisions which consists of infantry, Stryker and armored BCTs in a mature European theater.
- The operational area's terrain consists of plains. The time of the year is midwinter. Two of the divisions are in the theater, and one will arrive in theater on D+59.
- The current corps operations are defensive with offensive operation commencing on D+60 and planned through D+119.
- The evacuation policies are 7 days for the first 60 days and 15 days for D+60 through D+119.
- The dispersion allowance will be 20 percent for the theater.
- Time period length is 30 days.

D-15. Determine the theater hospital beds required to support the given force from D-day through D+119. Also, determine how the theater evacuation policy affects CONUS bed requirements. The given information is graphically depicted in Table D-6 on page D-13.

D-16. The admission rates can be determined from Tables D-4a through D-4i, on pages D-5 through D-10, based on the type units, theater, terrain, and climate given in the problem statement. In this case, the medical planner will use Table D-4b on page D-6.

D-17. To solve this problem, the medical planner will try to determine which of the following rates best fit the problem statement:

- Division under the modular force design which consists of infantry, armor and/or Stryker BCTs in defensive operations rates for periods 1 and 2 for the corps forward area (division troops and nondivision combat troops).
- Division consisting of infantry, armor and/or Stryker BCTs in offensive operations rates for periods 3 and 4 for the corps forward area (division troop and nondivision combat troops).
- Nondivisional reserve operations rates for the corps sustainment area (nondivision support troops).
- Nondivision inactive operations rates for the theater (nondivision support troops).

Table D-5. Example problem statement

	<i>Periods (30 Days)</i>	
	<i>1st and 2nd</i>	<i>3rd and 4th</i>
Average daily strengths		
Operations area		
Division troops	32,000	48,000
Nondivision combat troops*	24,000	36,000
Nondivision support troops	20,000	30,000
Sustainment area		
Nondivision support troops	20,000	30,000
Evacuation policies		
Operations area	7 days	15 days
Sustainment area	30 days	30 days
Dispersion factor **		
All areas	1.25 (20%)	1.25 (20%)
Admission rates		
Operational area		
Division troops/nondivision		
Combat troops		
WIA	1.54	4.37
DNBI	2.41	4.09
Nondivision support troops		
(corps support area)		
WIA	0.28	0.28
DNBI	1.87	1.87
Sustainment area		
WIA	0.05	0.05
DNBI	0.95	0.95
Note: Admission rates are determined from Table D-4c on page D-6, Inactive operations.		
Legend:		
* Use division admission rates since this most closely fits the situation.		
** Factor determined from Table D-3 on page D-4.		
DNBI disease and nonbattle injury		
WIA wounded in action		

**Table D-6. Example of preliminary bed requirement information
(problem statement graphically depicted)**

Operations area (population served)*							
Periods of estimate**	Intratheater evacuation policy (days)	Division troops and nondivision combat troops			Nondivision support troops		
		Average daily strength (1,000s)**	WIA admission rate (per_1,000)	DNBI admission rate (per_1,000)	Average daily strength (1,000s)***	WIA admission rate (per_1,000)	DNBI admission rate (per_1,000)
1	7	56	1.54	2.41	20	0.28	1.87
2	7	56	1.54	2.41	20	0.28	1.87
3	15	84	4.37	4.09	30	0.28	1.87
4	15	84	4.37	4.09	30	0.28	1.87
Sustainment area (population served)*							
Periods of estimate*	Intratheater evacuation policy (days)	Average daily strength (1,000s)***	WIA admission rate (per_1,000)	DNBI admission rate (per_1,000)	CONUS average daily strength (1,000s)***		
1	15	20	0.05	0.95	0		
2	15	20	0.05	0.95	0		
3	30	30	0.05	0.95	0		
4	30	30	0.05	0.95	0		
Legend:							
*	Dispersion factor is 20% (1.25).						
**	Use the closest average daily strength for the population to be served during each period.						
***	Thirty days each.						
CONUS	continental United States						
DNBI	disease and nonbattle injury						
WIA	wounded in action						

D-18. Methodology for the operations area: Using Tables D-2 and D-3, on pages D-3 and D-4, (or appropriate actual figures), select the type of operations area population to be served according to the expected admission experience of division and nondivision combat troops and nondivision support troops, the number of 30-day periods, and the evacuation policy for each period. Table D-7 on page D-14 shows the completed example calculations.

**Table D-7. Example calculations of operations area
bed requirements at end of each 30-day period**

Operations area daily admissions						Operations area accumulation factors for consecutive periods				Operations area remaining at end of consecutive periods			
Patient class	Period of estimate	Evac policy	Div & nondiv cbt trps +	Nondiv spt trps =	Total x	1	2	3	4 =	1	2	3	4
WIA	1	7	86.24	5.60	91.84	3.1063	0	0	0	285.28	0	0	0
	2	7	86.24	5.60	91.84		3.1063	0	0		258.28	0	0
	3	15	367.08	8.40	375.48			6.6306	0			2,489.66	0
	4	15	367.08	8.40	375.48				6.6306				4,489.66
DNBI	1	7	134.96	37.40	172.36	2.7768	0	0	0	478.61	0	0	0
	2	7	134.96	37.40	172.36		2.7768	0	0		478.61	0	0
	3	15	343.56	56.10	399.66			6.1563	0			2,460.43	0
	4	15	343.56	56.10	399.66				6.1563				2,460.43
Total patients remaining in operations area hospitals (from population served).										763.89	763.89	4,950.09	4,950.09
Operations area dispersion factor (1.25) (dispersion allowance=20%).										<u>X 1.25</u>	<u>X 1.25</u>	<u>X 1.25</u>	<u>X 1.25</u>
Operations area bed requirements at end of each 30-day period.										955	955	6,188	6,188
Note: The above example numbers must be substituted with actual numbers when calculating bed requirements. Total bed requirements rounded to next higher whole number.													
Legend: CBT combat DIV division DNBI disease and nonbattle injury EVAC evacuation NONDIV nondivision SPT support TRPS troops WIA wounded in action													

D-19. Perform the following steps below for WIA patients and then again for DNBI for each period of estimate:

- Use the example accumulation and disposition factors in Table D-2 on page D-3 (or appropriate actual figures) to obtain the total average daily operation area admissions (WIA or DNBI) for the current period of estimate. Multiply the average daily strength (for each type population served) by the corresponding admission rate (per 1,000 troops), then sum the results obtained for each population served separately (division and nondivision combat troops and nondivision support troops).
- Table D-8 illustrates the process used to obtain period 1 operation area average admissions. Compare the numbers obtained with the number shown in the example solution in Table D-7. Note that in Table D-7, the totals reflected are broken down by patient classifications (WIA or DNBI).

Table D-8. Example for obtaining operations area average daily admissions

<i>Daily patient classification</i>	<i>Period of estimate</i>	<i>Evacuation policy (days)</i>	<i>Average daily strength (1,000s)</i>	<i>X</i>	<i>Admission rate</i>	<i>=</i>	<i>Total</i>
WIA							
Division and nondivision combat troops	1	7	56	X	1.54	=	86.24
Nondivision support troops	1	7	20	X	0.28	=	5.60
TOTAL							91.84
DNBI							
Division and nondivision combat troops	1	7	56	X	2.41	=	134.96
Nondivision support troops	1	7	20	X	1.87	=	37.40
TOTAL							172.36
Legend:							
DNBI	disease and nonbattle injury						
WIA	wounded in action						

- The period of estimate numbers “1” (7 days) in Table D-7 corresponds to the current period in Table D-6 on page D-13 (7 days). Whatever period of estimate the medical planner is computing becomes the current period and the subsequent period is “2” from Table D-6. Locate the appropriate accumulation factor column (WIA or DNBI) in Table D-2, on page D-3, by noting the evacuation policy for that current period of estimate. Various combination sets of evacuation policies are identified. For subsequent combination periods, the medical planner will try to locate the appropriate evacuation policy combination which applies to the particular problem. Table D-9 illustrates the process used to obtain accumulation factors for period 1.

Table D-9. Example for finding accumulation factors

<i>Patient classification</i>	<i>Period of estimate (30 days)</i>	<i>Evacuation policy (days)</i>	<i>Accumulation factors</i>
WIA	1	7	3.1063
	2	7	0
DNBI	1	7	2.7768
	2	7	0
Legend:			
DNBI	disease and nonbattle injury		
WIA	wounded in action		

- Using the same solution shown in Table D-7 (or appropriate actual figures), obtain the number of current period admissions (WIA or DNBI) that are still remaining in the operation area hospitals at the end of the current period by multiplying the first accumulation factor by the total average daily admissions in the current period. Table D-10, on page D-16, illustrates the process used to obtain the number of operation area patients remaining at the end of period 1.

Table D-10. Example for obtaining total operation area patients remaining (period 1)

<i>Patient classification</i>	<i>Period estimate (30 days)</i>	<i>First period accumulation factor</i>	<i>X</i>	<i>Total average daily admission</i>	<i>=</i>	<i>Operation area patients remaining at end of period 1</i>
WIA	1	3.1063	X	91.84	=	285.28
DNBI	1	2.7768	X	172.36	=	478.61
Legend: DNBI disease and nonbattle injury WIA wounded in action						

- Obtain the number of current period admissions (WIA or DNBI) that are still remaining in the operation area hospitals at the end to the next period by multiplying the second accumulation factor by the total average daily admission in the current period. Table D-11 illustrates the process used to obtain the number of operation area patients remaining at the end of other successive periods until all nonzero accumulation factors have been used.

Table D-11. Example for obtaining total operation area patients remaining (period 2)

<i>Patient classification</i>	<i>Period estimate (30 days)</i>	<i>Second period accumulation factor</i>	<i>X</i>	<i>Total average daily admission</i>	<i>=</i>	<i>Operation area patients remaining at end of period 2</i>
WIA	1	0	X	91.84	=	0
DNBI	1	0	X	172.36	=	0
Note: This example is to show process only. Since this is a zero, computation is not necessary.						
Legend: DNBI disease and nonbattle injury WIA wounded in action						

- Using the same solution shown in Table D-6, on page D-13, (or appropriate actual figures), add admissions remaining in the operation area hospitals at the end of successive periods of estimate with any previous admissions still remaining in these hospitals at the end of the same successive periods. Disease and nonbattle injury results, as they are obtained, should be added at this point with WIA results to obtain total patients remaining in the operation area hospitals. Table D-12 illustrates the process used to obtain the total patients remaining in the operation area for period 1.

Table D-12. Example for obtaining total operation area bed requirements (period 1)

<i>Patient classification</i>	<i>Period 1</i>
WIA	285.28
DNBI	+478.61
Total	763.89
Legend: DNBI disease and nonbattle injury WIA wounded in action	

- Obtain the operation area bed requirements using total WIA and DNBI requirements at the end of each 30-day period of estimate as follows. Multiply the total patients remaining figures derived earlier by the operation area dispersion factor as shown in Table D-5 on page D-12. Table D-13 illustrates the process used to obtain total operation area bed requirements for period 1.

Table D-13. Example for obtaining total combat bed requirements (period 1)

<i>Period 1</i>	
Total patients remaining in operations area hospitals	763.89
Operation area dispersion factor	X 1.25
Operation area bed requirements at end of first 30-day period	955

ESTIMATION OF ENEMY PRISONER OF WAR BED REQUIREMENTS

D-20. Bed requirements for the total EPW patient load can be estimated grossly on the basis of 4 percent of the total EPW population at any given time multiplied by the appropriate dispersion factor. The dispersion factor would, however, be small since the EPW population is homogeneous and geographic considerations favor stability of location. The proportion of total bed requirements that are made available for specialized care will depend upon local conditions. Provision is made for specialized treatment beds on the basis of medical intelligence reports of morbidity among enemy troops, diseases endemic to the area of operation, and type of injuries and wounds resulting from the tactical situation (see Tables D-4a through D-4i [pages D-5 through D-10]). Table D-14 shows an example problem used in determining EPW beds based on 2100 EPWs captured during a 30-day period by a division in attack of a defensive position with complete surprise attained.

Table D-14. Estimate of enemy prisoner of war bed requirements

EPW captured per division in a 30 pay period	2100.00
Medical planning factor (0.04)	X 0.04
Beds required	84
Dispersion factor (lower)(1.05)	X 1.05
Total enemy prisoner of war bed requirements	88

STATISTICS

D-21. Table D-15 indicates estimated hospital admission rates for several geographical areas based on WWII, the Korean and Vietnam Conflicts, and subsequent study of the world health situation. These rates should be used only as a basis for planning gross theater HSS. Each rate represents a first-year experience typical of the area involved. When data is aggregated for greater or lesser periods, the same experience source produces significantly different rates. The medical planner must modify these rates, using the latest pertinent medical intelligence data, and consider their historical basis before he applies them in developing HSS workloads and bed requirements for a specific plan or type of combat action.

Table D-15. Rate of admission to hospitals per 1,000 strength per day

<i>Area</i>	<i>Disease and nonbattle injuries</i>	<i>Wounded in action</i>
North America	1.36	0.55
Europe	1.62	0.55
Northeast Asia	2.07	0.37
Southeast Asia	0.60	0.20
Africa	2.87	0.37
Middle East	1.96	0.37
South America	1.72	0.37

CHANGES IN EVACUATION POLICY

D-22. Changes in the evacuation policy affect hospital bed requirements. The number of days specified for a level of hospitalization includes the number of days the patient spends in hospitals at lower levels. See Table D-16 for the effect of reducing this policy.

Table D-16. Effects of a reduction in theater evacuation policy on bed requirements

<i>30 day evacuation policy</i>	–	<i>15 day evacuation policy</i>	=	<i>Difference</i>	X	<i>Admission rate**</i>	X	<i>Average theater strength (1000)</i>	=	<i>Patients</i>
10.85*	–	7.48*	=	3.37	X	2.07	X	500	=	3,488
15.06*	–	9.52*	=	5.54	X	0.37	X	500	=	<u>+1,025</u>
Total patients									=	4,513
20% Dispersion allowance									X	<u>1.25</u>
Total additional beds required									=	5,642
Legend:										
* Accumulation factors from Table D-2, on page D-3, figures have been rounded up.										
** Admission rates from Table D-15, Northeast Asia.										

Glossary

This glossary lists acronyms and terms with Army or joint definitions. Where Army and joint definitions differ, (Army) preceded the definition. The proponent publication for the term is listed in parentheses after the definition. This ATP is not the proponent publication for any terms.

SECTION I – ACRONYMS AND ABBREVIATIONS

AAMedP	Allied aeromedical publication
ADP	Army doctrine publication
ADRP	Army doctrine reference publication
AHS	Army Health System
AJP	Allied joint publication
AMEDD	Army Medical Department
AO	area of operations
AR	Army regulation
ATP	Army techniques publication
ATTP	Army tactics, techniques, and procedures
BCT	brigade combat team
CBRN	chemical, biological, radiological, and nuclear
COA	course of action
CONUS	continental United States
CSH	combat support hospital
DA	Department of the Army
DNBI	disease and nonbattle injury
DOD	Department of Defense
DODD	Department of Defense directive
EAB	echelons above brigade
EP	engineer pamphlet
EPW	enemy prisoner of war
FHP	force health protection
FM	field manual
HSS	health service support
JP	joint publication
MACE	Medical and Casualty Estimator
MEDBDE (SPT)	medical brigade (support)
MEDCOM (DS)	medical command (deployment support)
mph	miles per hour
MTF	medical treatment facility
NATO	North Atlantic Treaty Organization
OPLAN	operation plan

OPORD	operation order
STANAG	standardization agreement
U.S.	United States
USC	United States Code
WIA	wounded in action

SECTION II – TERMS

area of interest

That area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory. This area also includes areas occupied by enemy forces who could jeopardize the accomplishment of the mission. (JP 3-0)

Army Health System

A component of the Military Health System that is responsible for operational management of the health service support and force health protection missions for training, predeployment, deployment, and postdeployment operations. Army Health System includes all mission support services performed, provided, or arranged by the Army Medical Department to support health service support and force health protection mission requirements for the Army and as directed, for joint, intergovernmental agencies, coalition, and multinational forces. (FM 4-02)

battle injury

Damage or harm sustained by personnel during, or as a result of battle conditions. (JP 4-02)

casualty

Any person who is lost to the organization by having been declared dead, duty status-whereabouts unknown, missing, ill, or injured. (JP 4-02)

disease and nonbattle injury

All illnesses and injuries not resulting from enemy or terrorist action or caused by conflict. (JP 4-02)

force health protection

(Joint) Measures to promote, improve, or conserve the mental and physical well-being of Service members. These measures enable a healthy and fit force, prevent injury and illness, and protect the force from health hazards. (JP 4-02) (Army) Force health protection encompasses measures to promote, improve, conserve or restore the mental or physical well-being of Soldiers. These measures enable a healthy and fit force, prevent injury and illness, and protect the force from health hazards. These measures also include the prevention aspects of a number of Army Medical Department functions (preventive medicine, including medical surveillance and occupational and environmental health surveillance; veterinary services, including the food inspection and animal care missions, and the prevention of zoonotic disease transmissible to man; combat and operational stress control; dental services [preventive dentistry]; and laboratory services [area medical laboratory support]). (FM 4-02)

health service support

(Joint) All services performed, provided, or arranged to promote, improve, conserve, or restore the mental or physical well-being of personnel, which include, but are not limited to, the management of health services resources, such as manpower, monies, and facilities; preventive and curative health measures; evacuation of the wounded, injured, or sick; selection of the medically fit and disposition of the medically unfit; blood management; medical supply, equipment, and maintenance thereof; combat and operational stress control; and medical, dental, veterinary, laboratory, optometry, nutrition therapy, and medical intelligence services. (JP 4-02) (Army) Health service support encompasses all support and services performed, provided, and arranged by the Army Medical Department to promote, improve, conserve, or restore the mental and physical well-being of personnel in the Army. Additionally, as directed, provide support in other Services, agencies, and organizations. This includes casualty care (encompassing a number of Army Medical Department functions—organic and area medical support, hospitalization, the treatment aspects of dental care and behavioral/neuropsychiatric

treatment, clinical laboratory services, and treatment of chemical, biological, radiological, and nuclear patients), medical evacuation, and medical logistics. (FM 4-02)

hostile casualty

A person who is the victim of a terrorist activity or who becomes a casualty “in action.” “In action” characterizes the casualty as having been the direct result of hostile action, sustained in combat or relating thereto, or sustained going to or returning from a combat mission provided that the occurrence was directly related to hostile action. Included are persons killed or wounded mistakenly or accidentally by friendly fire directed at a hostile force or what is thought to be a hostile force. However, not to be considered as sustained in action and not to be interpreted as hostile casualties are injuries or death due to the elements, self-inflicted wounds, combat fatigue, and except in unusual cases, wounds or death inflicted by a friendly force while the individual is in an absent without leave, deserter, or dropped-from-rolls status or is voluntarily absent from a place of duty. (JP 1-02)

medical evacuation

The process of moving any person who is wounded, injured, or ill to and/or between medical treatment facilities while providing en route medical care. (FM 4-02)

medical regulating

The actions and coordination necessary to arrange for the movement of patients through the role of care and to match patients with a medical treatment facility that has the necessary health service support capabilities, and available bed space. (JP 4-02)

medical treatment facility

(Joint) A facility established for the purpose of furnishing medical and/or dental care to eligible individuals. (JP 4-02) (Army) Any facility established for the purpose of providing medical treatment. This includes battalion aid stations, Role 2 facilities, dispensaries, clinics, and hospitals. (FM 4-02)

patient

A sick, injured or wounded Soldier who receives medical care or treatment from medically trained personnel. (FM 4-02)

preventive medicine

The anticipation, prediction, identification, prevention, and control of communicable diseases (including vector-, food-, and waterborne diseases), illness, injuries, and diseases due to exposure to occupational and environmental threats, including nonbattle injury threats, combat stress responses, and other threats to the health and readiness of military personnel and military units. (FM 4-02)

return to duty

A patient disposition which, after medical evaluation and treatment when necessary, returns a Soldier for duty in his unit. (FM 4-02)

theater evacuation policy

A command decision indicating the length in days of the maximum period of noneffectiveness that patients may be held within the command for treatment. Patients that, in the opinion of a responsible medical officer, cannot be returned to duty status within the period prescribed are evacuated by the first available means, provided the travel involved will not aggravate their disabilities. (FM 4-02)

This page intentionally left blank.

References

REQUIRED PUBLICATIONS

These documents must be available to the intended users of this publication.

These publications are available online at <http://www.apd.army.mil>. Accessed on 9 July 2015.

ADP 3-0, *Unified Land Operations*, 10 October 2011.

ADP 5-0, *The Operations Process*, 17 May 2012.

ADP 6-0, *Mission Command*, 17 May 2012.

ADRP 1-02, *Terms and Military Symbols*, 2 February 2015.

ADRP 3-0, *Unified Land Operations*, 16 May 2012.

ADRP 5-0, *The Operations Process*, 17 May 2012.

ADRP 6-0, *Mission Command*, 17 May 2012.

FM 4-02, *Army Health System*, 26 August 2013.

FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014.

These publications are available online at <http://www.dtic.mil/doctrine>. Accessed on 9 July 2015.

JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 8 November 2010.

JP 3-0, *Joint Operations*, 11 August 2011.

JP 4-02, *Health Service Support*, 26 July 2012.

JP 5-0, *Joint Operation Planning*, 11 August 2011.

RELATED PUBLICATIONS

These documents contain relevant supplemental information.

INTERNATIONAL PUBLICATIONS

These documents are available online as follows: Convention No. I on page 7; Convention No. II on page 10; Convention No. III on page 13; and Convention No. IV on Page 17, at http://www.loc.gov/rr/frd/Military_Law/pdf/GC-senReport.pdf. Accessed on 19 August 2015.

Geneva Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field, 12 August 1949.

Geneva Convention (II) for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea, 12 August 1949.

Geneva Convention (III) relative to the Treatment of Prisoners of War, 12 August 1949.

Geneva Convention (IV) relative to the Protection of Civilian Persons in Time of War, 12 August 1949.

NATO STANDARDS AND STANDARDIZATION AGREEMENTS

These publications are available online at <http://nso.nato.int/nso/>. Accessed on 9 July 2015.

Standard, AAMedP-1.1, *Aeromedical Evacuation*, Edition A Version 1, 17 November 2014.

Standard, AJP-4.10, *Allied Joint Doctrine for Medical Support*, Edition B Version 1, 28 May 2015.

STANAG 2087, *Medical Employment of Air Transport in the Forward Area*, Edition 6, 30 October 2008.

STANAG 2228, *Allied Joint Doctrine for Medical Support*, Edition 3, 28 May 2015.

STANAG 2553, *NATO Planning Guide for the Estimation of Chemical, Biological, Radiological, and Nuclear (CBRN) Casualties—Allied Medical Publication-8(C)*, 3 March 2011.

STANAG 3204, *Aeromedical Evacuation*, Edition 8, 17 November 2014.

UNITED STATES CODE

This document is available online at <http://uscode.house.gov>. Accessed on 10 July 2015.

10 USC, *Armed Forces*.

DEPARTMENT OF DEFENSE PUBLICATIONS

Department of Defense publications are available online at <http://www.dtic.mil/whs/directives/>.

DODD 5100.01, *Functions of the Department of Defense and Its Major Components*, 21 December 2010. <http://www.dtic.mil/whs/directives/corres/pdf/510001p.pdf> Accessed on 9 July 2015.

MULTISERVICE PUBLICATIONS

Most multiservice doctrinal publications are available online at <http://www.apd.army.mil>. Accessed on 9 July 2015.

ATP 3-37.10/MCRP 3-17.7N, *Base Camps*, 26 April 2013.

ATP 4-02.83/MCRP 4-11.1B/NTRP 4-02.21/AFMAN 44-161(I), *Multiservice Tactics, Techniques, and Procedures for Treatment of Nuclear and Radiological Casualties*, 5 May 2014.

FM 4-02.7/MCRP 4-11.1F/NTTP 4-02.7/AFTTP 3-42.3, *Multiservice Tactics, Techniques, and Procedures for Health Service Support in a Chemical, Biological, Radiological, and Nuclear Environment*, 15 July 2009.

ARMY PUBLICATIONS

Most Army doctrinal publications are available online at <http://www.apd.army.mil>. Accessed on 10 July 2015.

ADRP 2-0, *Intelligence*, 31 August 2012.

AR 380-5, *Department of the Army Information Security Program*, 29 September 2000.

ATP 3-57.10, *Civil Affairs Support to Populace and Resources Control*, 6 August 2013.

ATP 3-57.60, *Civil Affairs Planning*, 27 April 2014.

ATP 4-02.2, *Medical Evacuation*, 12 August 2014.

ATP 4-02.3, *Army Health System Support to Maneuver Forces*, 9 June 2014.

ATP 4-02.5, *Casualty Care*, 10 May 2013.

ATP 4-02.46, *Army Health System Support to Detainee Operations*, 12 April 2013.

ATP 4-25.12, *Unit Field Sanitation Teams*, 30 April 2014.

ATTP 3-06.11, *Combined Arms Operations in Urban Terrain*, 10 June 2011.

EP 1105-3-1, *Base Camp Development in the Theater of Operations*, 19 January 2009.

http://www.publications.usace.army.mil/Portals/76/Publications/EngineerPamphlets/EP_1105-3-1.pdf

FM 3-39, *Military Police Operations*, 26 August 2013.

FM 3-57, *Civil Affairs Operations*, 31 October 2011.

FM 3-63, *Detainee Operations*, 28 April 2014.

FM 4-02.1, *Army Medical Logistics*, 8 December 2009.

FM 4-02.17, *Preventive Medicine Services*, 28 August 2000.

FM 4-02.18, *Veterinary Service, Tactics, Techniques, and Procedures*, 30 December 2004.

FM 4-02.19, *Dental Service Support Operations*, 31 July 2009.

FM 27-10, *The Law of Land Warfare*, 18 July 1956.

OTHER DOCUMENTS AND PUBLICATIONS

The Barell Injury Diagnosis Matrix, Classification by Body Region and Nature of the Injury.

<http://www.cdc.gov/nchs/injury/ice/barell_matrix.htm>

Institute for Defense Analyses, Technical Reference Manual: *NATO Planning Guide for the Estimation of Chemical, Biological, Radiological, and Nuclear (CBRN) Casualties, Allied Medical Publication-8(C)*, August 2010. <<http://www.dtic.mil/dtic/tr/fulltext/u2/a536889.pdf>>

International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) <<http://www.cdc.gov/nchs/icd/icd9cm.htm>>

World Health Organization, *International Statistical Classification of Diseases and Related Health Problems*, 10th Revision, Volume 2, 2010 Edition. <http://www.who.int/classifications/icd/ICD10Volume2_en_2010.pdf?ua=1>

WEB SITES

Center for Excellence in Disaster Management and Humanitarian Assistance. <<https://www.cfe-dmha.org/>>

Defense Health Agency, Medical Logistics Division. <<https://www.dmsb.mil>>

The Dupuy Institute. <<http://www.dupuyinstitute.org/about.htm>>

International Committee of the Red Cross. <<http://www.icrc.org/>>

Médecins Sans Frontières/Doctors Without Borders. <www.doctorswithoutborders.org/>

National Center for Medical Intelligence. <<https://www.ncmi.detrick.army.mil>>

Pan American Health Organization. <www.paho.org/hq>

United Nations. <<http://www.un.org>>

United States Army Medical Department Center and School, Capabilities Development Integration Directorate, Computational Sciences Division, Center for AMEDD Strategic Studies, Medical and Casualty Estimator (MACE) tool. <<https://cass.amedd.army.mil/index.php>>

United States Army Medical Materiel Agency. <<http://www.usamma.amedd.army.mil>>

United States Army Public Health Command. <<http://phc.amedd.army.mil/Pages/default.aspx>>

United States Army Health Facility Planning Agency. <<http://www.armyhealthfacilities.amedd.army.mil/>>

United States Food and Drug Administration. <<http://www.fda.gov/default.htm>>

World Health Organization. <<http://www.who.int/en/>>

PRESCRIBED FORMS

None.

REFERENCED FORMS

Unless otherwise indicated, DA Forms are available on the Army Publishing Directorate (APD) Web site (www.apd.army.mil).

DA Form 2028, *Recommended Changes to Publications and Blank Forms*.

This page intentionally left blank.

Index

References are to paragraph numbers unless otherwise stated.

A

ambulance, 1-14—15, 2-11, 2-25—26, 2-31, 2-36—2-40, 3-27, 4-26—33, Figure A-1

Army Health Facility Planning Agency, 4-46

Army Health System, Preface, Introduction, 1-1, 1-3—5, 1-8—17, 1-20—21, 1-26, 1-33, 1-35—40, 2-1—2, 2-6, 2-8, 2-11, 2-15, 2-17—18, 2-20, 2-31, 2-46, 2-58, 2-61, 2-68, 2-83, 2-86—89, 2-92—93, 2-95, 2-101, 2-103, 3-6—7, 3-11, 3-13, 3-15—16, 3-18—23, 3-25—28, 3-31, 3-47, 3-50—51, 3-53—55, 3-58—60, 3-63—64, 3-66, 4-11, 4-50, A-1, Figure A-1, Figure C-1

augmentation team, 2-58—59, 3-38

B

base camp, 4-45—4-47

battalion aid station, 1-31, 3-64, 4-8, 4-47

brigade combat team, 1-13, 1-33, 2-8, 2-14, 2-24, 2-36—37, 2-58, 2-75—76, 2-89, 3-64, 4-16—17, D-14, D-17

C

chemical, biological radiological, and nuclear, Preface, 1-17—18, 2-13, 2-45, 2-80, 2-98, 2-100, 2-103, 3-25, 3-27, 3-47, 4-5, 4-17, 4-44, Figure A-1

combat support hospital, Preface, 1-15, 1-25, 2-52—53, 2-57—58, 2-97, 4-45

command surgeon, Preface, 1-13, 2-88, 3-27, 3-34, 3-46, Figure C-1

D

Defense Intelligence Agency, 4-48

detained person, 4-16, Figure A-1, Figure C-1

E

eligibility of medical care, 3-38, Figure A-1, Figure C-1

F

forward surgical team, 1-13, 1-32, 2-26, 2-58, 2-93

G

Geneva Conventions, 2-91, 3-27, 3-30, 3-46, Figure A-1, Figure C-1, D-6

M

mass casualty, 2-60, 3-13, 3-47, D-6

medical battalion (multifunctional), 2-5—6, 2-8, 2-12, 2-14—16, 2-37—38, 2-72, 2-75—76, 3-21

medical brigade (support), 2-5—6, 2-8, 2-10—13, 2-15—16, 2-38, 2-72, 3-18, 3-21

medical command (deployment support), 2-5—8, 2-10—11, 2-15—16, 2-72, 3-16, 3-21

medical functions, Preface, Introduction, 1-5—6, 1-10, 1-16, 1-18, 1-38, 1-40, Chapter 2, Chapter 3 (Introduction), 3-19, 3-53, 4-12, Figure A-1

medical intelligence, 1-17, 2-21, 3-13, 3-17, 3-22, 3-24, 3-40, 4-48—50, Figure A-1, D-20—21

medical regulating, 1-5, 1-18, 2-8, 2-12, 2-15, 2-33, 2-40, 2-47—55

Military Health System, 1-4, 1-16, 2-2, 2-30, 2-83

mission command, Preface, 1-4—5, 1-10, 1-38, 1-40, Chapter 2 (Introduction), 2-2—6, 2-8, 2-10, 2-12, 2-14—15, 2-17—18, 2-38, 2-52, 2-79, 3-2, Figure A-1

N

National Center for Medical Intelligence, 3-22, 4-48

R

retained person, 3-32, 3-53, 4-7, 4-12, Table 3-1, Figure A-1, Figure C-1

roles of care, 1-15, 1-26—35, 2-24, 2-27, 2-47

S

special operation forces, 1-31

T

tactical combat casualty care, 1-31—32, 2-26

theater evacuation policy, 1-15, 2-44—46, 2-55, 2-57, 2-59, 3-53, D-4, D-10, D-15, Table D-6, Table D-16

U

United States Public Health Command, 4-49

W

warfighting functions, 1-17, 2-71, 2-74, Figure C-1

This page intentionally left blank.

ATP 4-02.55
16 September 2015

By Order of the Secretary of the Army

MARK A. MILLEY
General, United States Army
Chief of Staff

Official:

A handwritten signature in black ink, appearing to read "Gerald B. O'Keefe". The signature is fluid and cursive, with the first name "Gerald" being the most prominent.

GERALD B. O'KEEFE
Administrative Assistant to the
Secretary of the Army
1523702

DISTRIBUTION:

Active Army, Army National Guard, and United States Army Reserve: Distributed in electronic media only (EMO).

